# *MP 700*
# *MP 730*

# SERVICE MANUAL

Canon

# MultiPASS MP730

# MultiPASS MP700

# SERVICE MANUAL

## REVISION 0

| | | | |
|---|---|---|---|
| **MultiPASS MP730** | H12-2692 | 120V | USA |
| **MultiPASS MP730** | H12-2696 | 120V | CND/LTN |
| **MultiPASS MP700** | H12-2702 | 120V | USA |
| **MultiPASS MP700** | H12-2706 | 120V | CND |

Canon

**APR. 2003** **HY8-19B3-000**

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### Application

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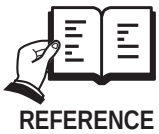
### DTP System

The data contained on this manual were created using Windows 2000® computers.
Document creation and page layout were performed using Adobe® PageMaker® 6.5.
Logos and illustrations were created using Adobe® Illustrator® 9.0.

# I. MEANING OF MARKS

The marks used in this manual have the following meanings.

| Mark | Meaning |
|---|---|
| | States a precaution to be taken to prevent danger to personnel, damage to the product, or damage to electronic components by discharge of static electricity. for example. |
| | States a precaution to be taken to prevent damage to electronic components by electrostatic discharge. |
| | If the following mark is used, following the directions given. |
| | Informs you of fire-related cautions. |
| | Informs you that the plug must be removed from the power outlet before starting an operation. |
| NOTE | Gives useful information to understand descriptions. |
|  REFERENCE | Indicates sections to be read to obtain more detailed information. |

# II. ABOUT THIS MANUAL

This manual is divided into five parts, and contains information required for servicing the product.

## Chapter 1: General Description

This part explains product specifications and the how to service the unit safely. It is very important, so please read it.

## Chapter 2: Technical Reference

This part explains the technical theory the product.

## Chapter 3: Assembly and Disassembly

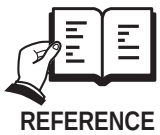
This part explains the assembly and disassembly of the product.

## Chapter 4: Maintenance and Service

This part explains how to maintain the products for adjustment and troubleshooting and service operations and service switches.

## Chapter 5: Appendix

This part explains the informations of the optional products and user data flow.



REFERENCE

•For more details of user operations and user reports, see the separate volume of *USER'S GUIDE*.
•Detailed description of each SSSW/parameter is not given in this manual except the new SSSWs/parameters added to this model.See *G3 Facsimile Service Data Handbook (supplied separately)* for details them.
•See the *G3/G4 Facsimile Error Code List (Rev.2, supplied separately)* for details of the error codes not shown in this manual.

# III. REVISION HISTORY

| REVISION | CONTENT |
|---|---|
| 0 | Original |

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# Chapter 1

# General Description

# 1. FEATURES

## 1.1 Overview

This product is a G3 facsimile based on the ITU-T recommendations. It can be used in telephone networks.

### Picture Quality Color Printer

High quality printing can be accomplished with the Canon Bubble Jet (BJ) method using the maximum 4800 dpi x 1200 dpi resolution.

Various media can be printed at high speed which is maximum 22 pages/minute in black and white or 14 pages/minute in color.

### Plain paper fax which can transmit/receive in color (MP730 only)

Conforming to ITU-T recommendations, this fax is able to transmit/receive in color. Due to containing extremely high-speed 33.6 kbps modems, transmission time can be shortened. Pictures and photographs can both be send and received clearly by UHQ (Ultra High quality), Canon's vivid image processing technology. Up to 30 letter, legal and A4 size sheets, can be set in the ADF. 10 one-touch dial entries and 100 speed dial entries can be registered, and group dial and broadcasting transmission can also be done. When paper and ink run out, the data is saved to memory, so there is no worry.

### Out-of-Ink Function

This machine has a function which detects when ink has run out. The presence/absence of ink in the ink chamber is detected by reflecting ink sensor.

### Copy Function

This machine can be used as a copier which achieves the recording resolution of 600 dpi x 600 dpi for black and white copying or 1200 dpi x 1200 dpi for color copying.

### Full Color & 256 Gradation Grayscale Scanner

Using MP Toolbox or MP Drivers (ScanGear and WIA driver), full color and 256-gradation grayscale images with a quality of 25-9600 dpi can be read into a computer.

### PC Fax (MP730 only)

By connecting this machine to a computer, a fax can be transmitted from the included MultiPASS Suite or from a Windows application. (Cannot be receive)

# 2. SPECIFICATIONS

## 2.1 General Specification

### Type

Desktop

### Power source

AC 120-127 V, 60 Hz

### Power consumption

| | |
|---|---|
| Standby | Approx. 10.6 W (MP730) |
| | Approx. 8.6 W (MP700) |
| Max. | Approx. 50.8 W(MP730) |
| | Approx. 42.1 W(MP700) |

### Environmental conditions

| | |
|---|---|
| Temperature | 59-81.5 ° F (15-27.5 ° C) |
| Humidity | 20-80 %RH |

### Operating noise

Measured in accordance with ISO standards

| | |
|---|---|
| Standby | 35 dB(A) or less |
| Operating | 55 dB(A) or less |

### Dimensions (W x D x H)

17.28” x 19.53” x 12.83” (439 mm x 496 mm x 326 mm) (MP730)
17.28” x 19.53” x 10” (439 mm x 496 mm x 253 mm) (MP700)
Not including trays

### Weight

Approx. 28.2 lb. (12.8 kg) (MP730)
Approx. 24 lb. (10.9 kg) (MP700)

## 2.2 Communication Specification (MP730 only)

### Applicable lines

PSTN (Public Switched Telephone Network)

### Applicable Services

DRPD (Distinctive Ring Pattern Detection)

### Handset

None

### Transmission method

Half-duplex

### Transmission control protocol

ITU-T T.30 binary protocol
ITU-T V.8 protocol, V.34 protocol

### Modulation method

| | |
|---|---|
| G3 image signals | ITU-T V.27ter (4.8k, 2.4k bps) |
| | ITU-T V.29 (9.6k, 7.2k bps) |
| | ITU-T V.17 (14.4k, 12.0k, TC9.6k, TC7.2k bps) |
| | ITU-T V.34 (33.6k, 31.2k, 28.8k, 26.4k, 24.0k, 21.6k, 19.2k, 16.8k, 14.4k, 12.0k, 9.6k, 7.2k, 4.8k, 2.4k bps) |
| G3 procedure signals | ITU-T V.21 (No. 2) (300 bps) |
| | ITU-T V.8 300 bps |
| | ITU-T V.34 1200 bps, 600 bps |

### Coding method

| | |
|---|---|
| Black/white | MH, MR, MMR, JBIG |
| Color | JPEG |

### Error correction

ITU-T ECM

### Time required for transmission protocol

| Mode | Pre-message*1 protocol | Post-message*2 protocol (between pages) | Post-message*3 protocol (after pages) |
|---|---|---|---|
| V.8/V.34 | approx.6 sec. | approx.1 sec. | approx.1 sec. |
| T.30 | approx.12 sec. | approx.4 sec. | approx.3.5 sec. |

*1 Time from when other facsimile is connected to the line until image transmission begins.
*2 Post-message (between pages): Time from after one document has been sent until transmission of the next document starts if several pages are transmitted.
*3 Post-message (after last pages): Time from after image transmission is completed until line is switched from facsimile to telephone.

### Minimum transmission time

10 msec.(G3), 0 msec.(G3, ECM)

### Transmission output level

From -8 to -15 dBm

### Receive input level

From -3 to -43 dBm

### Modem IC

CONEXANT FM336Plus

## 2.3 Color Communication Specification (MP730 only)

### ITU-T recommendation

ITU-T T.4 ANNEX E (JPEG Header)
ITU-T T.30 ANNEX E (JPEG Color Fax)
ITU-T T.42 (Color space for Color Fax)
ITU-T T.81 (JPEG)

### Scanning document size

A4

### Printing paper size

A4

### Resolution

200 dpi x 200 dpi

### Picture element

8 bit

### Coding

JPEG

### Color space

CIE LAB

### Illuminant data

CIE standard illuminant D50

### Sub sample

4:1:1 (=Lab)

### Color number

24 bit

### Resolution

Standard, Fine

## 2.4 Scanning Specification

### Type

Book
Sheet (MP730 only)

### ADF capacity (MP730 only)

Max.35 sheets (Letter, A4)
Max.30 sheets (Legal)

### Effective scanning width

| | |
|---|---|
| Letter/Legal | 8.42” (214 mm) |
| A4 | 8.19” (208 mm) |

### Scanning method

Color contact image sensor scanning method

### Scanning speed

| Mode | Scanning speed |
|---|---|
| Text/Gray scale | 5.3 sec./page |
| Color | 15.9 sec./page |

### Scanner gradations

| | |
|---|---|
| Gray scale | 8 bit, 256 gradations |
| Color | R,G,B (8 bit each) full color capability |

### TWAIN/WIA

Yes

### Scanning density adjustment

9 density level

### Image mode

Halftone (PHOTO mode)

### Halftone (fax and copy)

64-gradations error diffusion system (UHQ)

### Prescan

Yes

### Document dimensions (W x L)

MP730

| | |
|---|---|
| ADF Maximum | 8.50” x 39.3” (216 mm x 1000 mm) |
| ADF Minimum | 5.83” x 4.13” (148 mm x 105 mm) |
| Document glass | 8.50” x 11.7” (216 mm x 297 mm) |

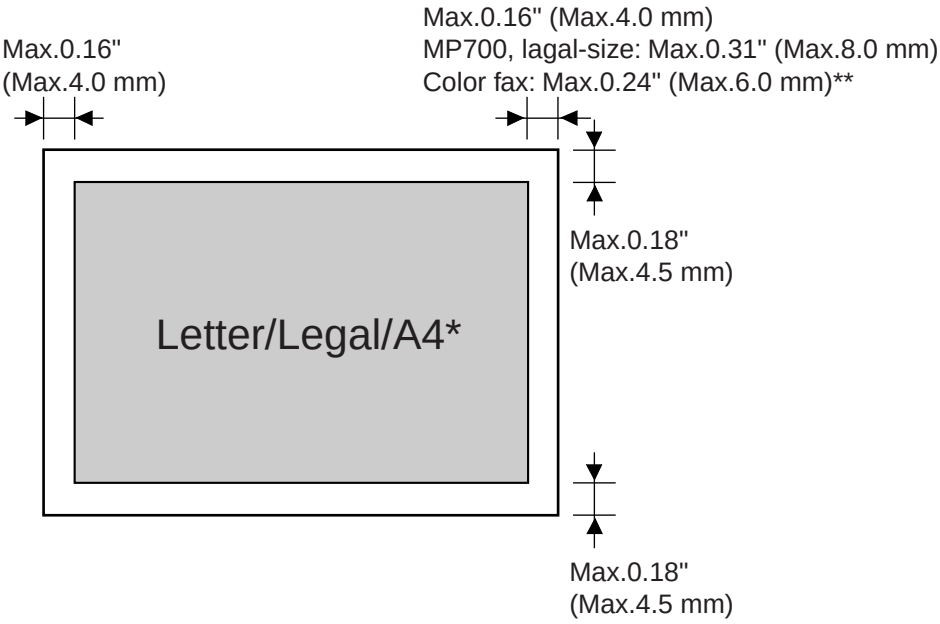
MP700

| | |
|---|---|
| Document glass | 8.50” x 14.0” (216 mm x 356 mm) |

Document thickness

| | |
|---|---|
| ADF | 0.002- 0.005” (0.06- 0.13 mm) (50 -90 g/m$^2$) |
| Document glass | 0.79” (20 mm) |

### Scanning range




* When using legal-size documents with the MP730, load them into the ADF.
** MP730 only

**Figure 1-1 Scanning Range**

**NOTE**

Document scanning width “A4/Letter” is set in service data #1 SSSW SW06, bit4.

## 2.5 Printer Specification

### Print method

Bubble-jet ink on-demand

### BJ cartridge

| | |
|---|---|
| Structure | Detachable ink tanks for each color and BK/CL(M, C, Y) integrated head |
| Printhead | BK: 320 nozzles, 2-column vertical array |
| | CL: 512 nozzles/color, 4-column vertical array/color(M, C) |
| | 256 nozzles, 2-column vertical array (Y) |
| Ink colors | Pigment BK, dyes C, M, Y |

### Ink tank

| | |
|---|---|
| Product name | BCI-3eBK/BCI-3eC/BCI-3eM/BCI-3eY |
| Product code | F47-3131/F47-3141/F47-3151/F47-3161 |
| Weight | BK: 32 g |
| | CL(C, M, Y): 11 g |

### Ink detection

Optical LOW-ink sense

### Printing speed

| | |
|---|---|
| Black | Approx.22 pages/minute |
| Color | Approx.14 pages/minute |

### Printing resolution

4800 dpi x 1200 dpi

### Paper output tray stacking

Approx.50 sheet (when using the recommended paper)

### Paper tray

| | |
|---|---|
| Paper supply method | ASF (Automatic Sheet Feeder) |
| Number of paper tray | 1 tray: Letter/Legal/A4 (Universal) |
| Paper capacity | Approx.150 sheets (Max.0.51” (13 mm) thickness) |

### Borderless print

Yes

### Quiet print mode

Yes

### Recommended paper

| | |
|---|---|
| Canon Copier LTR/LGL Premium Ppaer | |
| Weight | 75 g/m$^2$ |
| Paper size | Letter, Legal |
| Manufactured by | BOISE CASCADE |
| | |
| PLOVER BOND | |
| Weight | 75 g/m$^2$ |
| Paper size | Letter |
| Manufactured by | FOX RIVER |
| | |
| XEROX 4024 | |
| Weight | 75 g/m$^2$, 90 g/m$^2$ |
| Paper size | Letter, Legal |
| Manufactured by | XEROX |

### Printing range (Black and white fax)

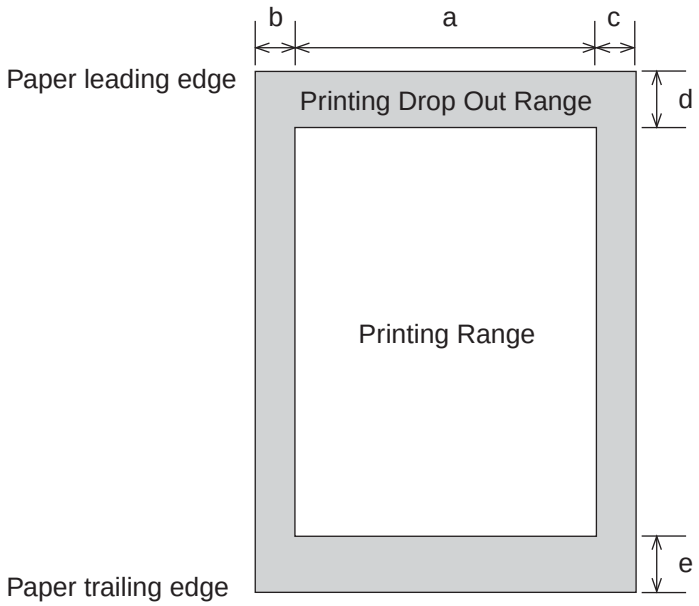



**Figure 1-2 Printing Range (Black and white fax)**

| Item | A4 | Letter | Legal |
|---|---|---|---|
| a Effective printing width | 8.00” (203.2 mm) | 8.00” (203.2 mm) | 8.00” (203.2 mm) |
| b Left margin | 0.13”±0.06” (3.4±1.5 mm) | 0.25”±0.06” (6.4±1.5 mm) | 0.25”±0.06” (6.4±1.5 mm) |
| c Right margin | 0.13”±0.06” (3.4±1.5 mm) | 0.25”±0.06” (6.3±1.5 mm) | 0.25”±0.06” (6.3±1.5 mm) |
| d Top margin | 0.12”±0.06” (3.0±1.5 mm) | 0.12”±0.06” (3.0±1.5 mm) | 0.12”±0.06” (3.0±1.5 mm) |
| e Bottom margin | 0.20”±0.12” (5.0±3.0 mm) | 0.20”±0.12” (5.0±3.0 mm) | 0.20”±0.12” (5.0±3.0 mm) |

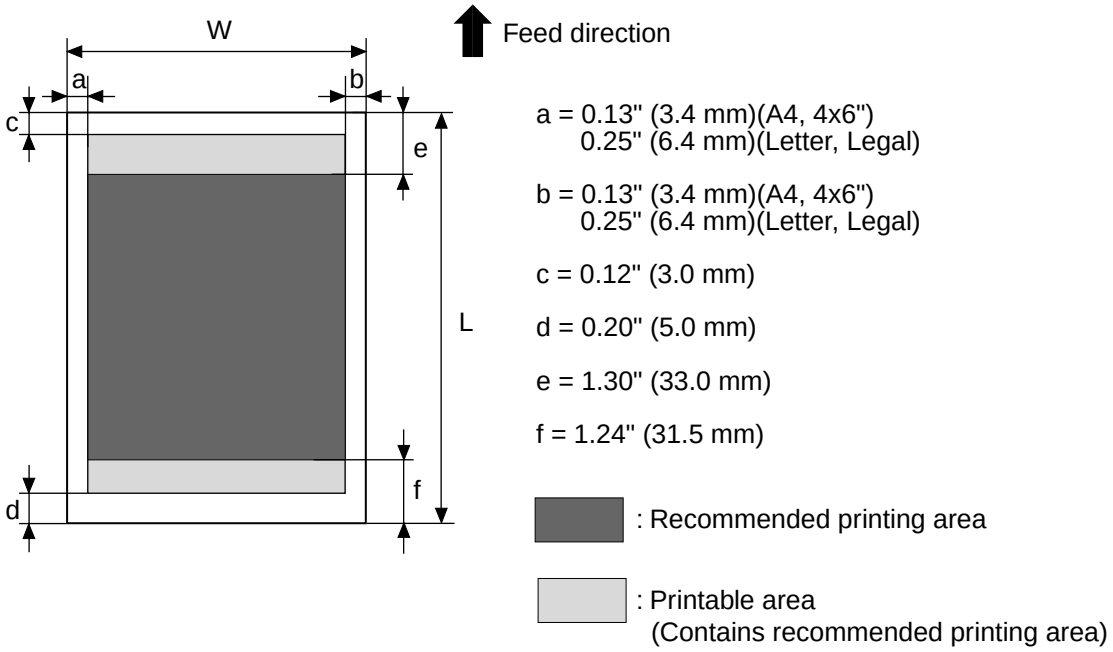
NOTE

The printing range is set in user data “PRINTER SETTINGS”, “PAPER SIZE”.

## Printing range (Color fax and Printer mode)

Plain paper and Special media (Color fax and Printer mode)

WxL = 3.15x4.72 in. (Min.90.0x120.0 mm)
Max.8.5x23 in. (215.9x584.2 mm)




Envelopes

WxL = COM #10 4.17x9.48 in. (106x241 mm)
DL 4.33x8.66 in. (110x220 mm)

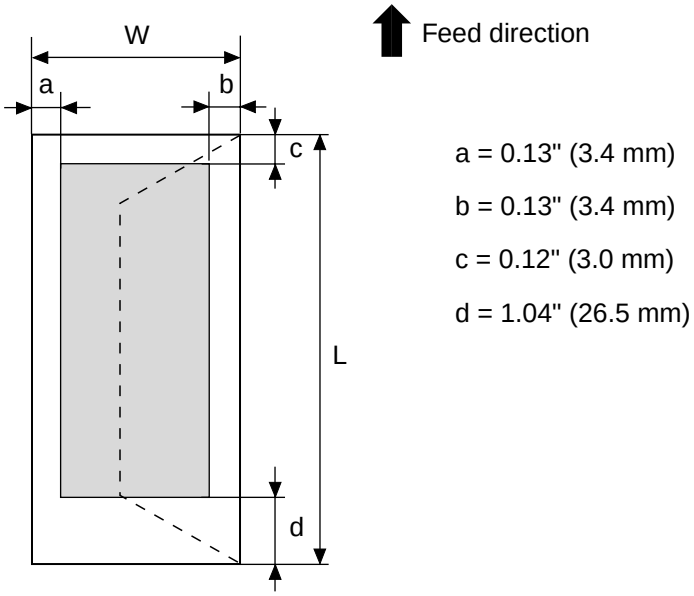



**Figure 1-3 Printing Range (Color fax and Printer mode) 1**

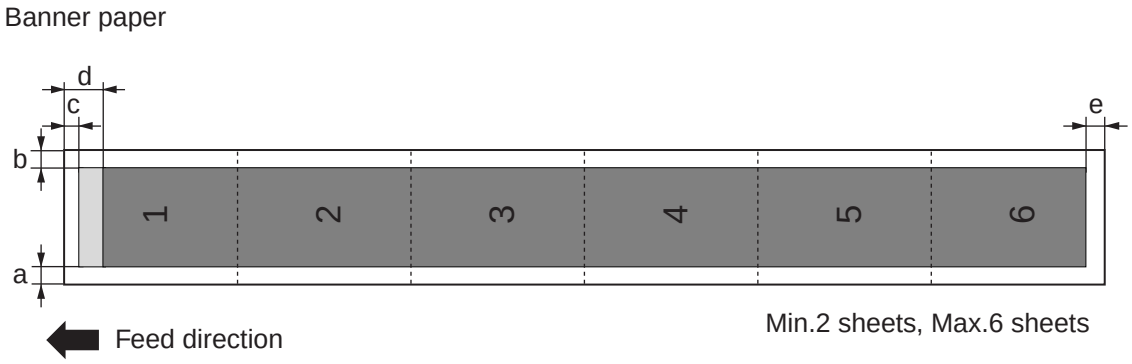



**Figure 1-4 Printing Range (Color fax and Printer mode) 2**

## 2.6 Copy Specification

### Color copy

Yes

### Multiple copy

99 copies

### Copy mode

| | |
|---|---|
| Black/white | DRAFT, TEXT, PHOTO |
| Color | FAST, NORMAL, FINE |

### Copy resolution

| | |
|---|---|
| Black/white | 600 dpi x 600 dpi |
| Color | 1200 dpi x 1200 dpi |

### Copy magnification ratio

25 to 400 %

### Fixed ratio

Max.(400%), 4” x 6”->LTR(212%), A4->LTR(95%), LGL->LTR(78%), Min.(25%)

## 2.7 Photo Print Specification

### Interface

Card slot

### Compatible memory cards

Compact flash (type I, type II)
Smart media
Memory stick
SD memory card
multimedia card

### Incompatible memory cards

Microdrive memory card
Smart media (less than 2MB)

### Layout

| | |
|---|---|
| Plain paper (Letter/A4) | With/without borders, index (max.70 frames) |
| Photo Paper Pro (Letter/A4) | With/without borders, index (max.70 frames) |
| Photo Paper Pro (Card) | With borders, index (max.15 frames) |

### Features

Date printing
Vivid photo printing
DPOF function-compatible

## 2.8 Function

### Dialling

| | |
|---|---|
| Manual dialling | Numeric button |
| Auto dialling | Max.120 digits |
| | One-touch: 10, Coded speed: 100, Numeric button: 1 |
| Group dialling | Max.109 locations |
| Redial | Numeric button redial function (Max.120 digits) |

### Transmission

| | |
|---|---|
| Broadcast transmission | Max.111 locations (One-touch: 10, Coded speed: 100, Numeric button: 1) |
| Delayed Tx | None |
| Confidential Tx | None |
| Relay broadcasting originating | None |
| Relay broadcasting | None |
| Polling Tx | None |
| Dual access | Yes (Max.30 reservations) |

### Reception

| | |
|---|---|
| FAX/TEL switching | Yes |
| Method | CNG detection |
| Message | None |
| Pseudo CI | None |
| Pseudo ring | Yes |
| Pseudo ring back tone | Yes |
| Reduction setting for Rx | Yes |
| Automatic reduction | Yes (100-70%) |
| Built in answering machine | None |
| Answering machine connection | Yes (Telephone answering priority type) |
| Remote Rx | Yes (Remote ID method) |
| Memory lock Rx | None |
| Rx printing in reverse order | None |
| Confidential Rx | None |
| Polling Rx | Yes |

### Memory backup

| | |
|---|---|
| Backup contents | Dial registration data, User data, Service data, Time, etc. |
| Backup IC | 256 kbit SRAM |
| Backup device | Lithium battery DC 3.0V/220 mAh |
| Battery life | Approx.5 years |

### Image data backup

None

### Image memory

Approx 4.0 MB

### Activity management

#### a) User report

Activity management report (Every 20 communications)
Activity report (Tx/Rx)
One-touch speed dialling list
Coded speed dialling list
Group dialling list
Memory clear list
User's data list
Document memory list
Multi activity report

#### b) Service report

System data list
System damp list

### Others

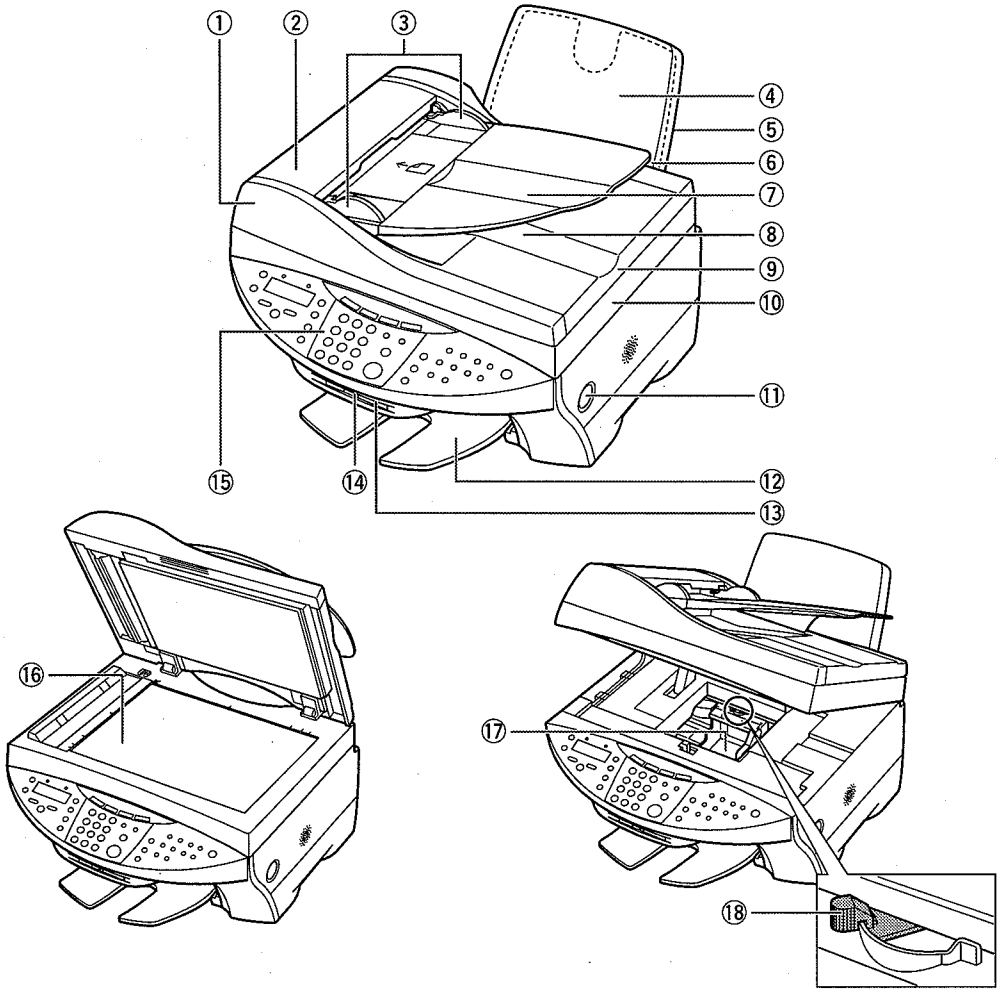
| | |
|---|---|
| Closed network | None |
| Direct mail prevention | None |
| Memory box | None |
| Forward transmission | None |
| Transmitting terminal ID | Yes |
| Time/date | |
| Management data | Year/month/day/hour/minute (24 hours display) |
| Precision | ±90 sec. per month |
| Display | 20 digits x 2 row |
| Completion stamp | None |
| Program button | None |
| Hook button | Yes |
| Telephone exchange function | None |
| Speaker phone | None |
| Demo print function | None |
| Help function | None |

# 3. OVERVIEW

## 3.1 External View

### ▶ Main components of the machine

Fax model shown here.



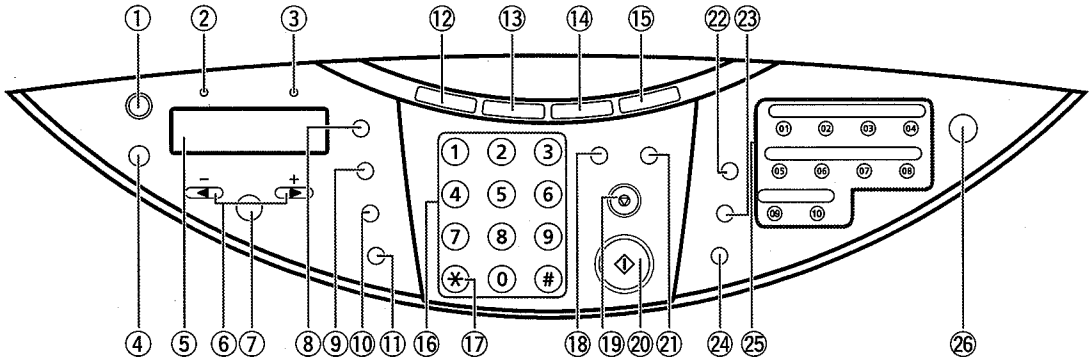

① Fax Model ADF (Automatic Document Feeder)
② Fax Model Feeder cover
③ Fax Model Document guides
④ Multi-purpose tray
⑤ Tray cover
⑥ Automatic sheet feeder
⑦ Fax Model Document tray
⑧ Fax Model Document output slot
⑨ Document cover
⑩ Scanning unit (Printer cover)
⑪ [Open] button
⑫ Paper output tray
⑬ Card slot
⑭ Indicator light
⑮ Operation panel
⑯ Platen glass
⑰ Printhead holder
⑱ Paper thickness lever

**Figure 1-5 External View**

## 3.2 Operation Panel

### Operation panel of the machine

Fax model shown here.




① **[Resume] key**
Resumes an operation after an error is corrected. Fax Model Also ejects a document remaining in the ADF.

② Fax Model **In Use/Memory light**
Blinks or lights during operation. Lights also when there are documents in the machine's memory.

③ **Alarm light**
Blinks when an error occurs or when the machine needs attention.

④ **[Menu] key**
Accesses the settings to customize operation of your machine.

⑤ **LCD**
Displays messages and selections, and prompts during operation.

⑥ **[◄]([–]) and [►] ([+]) keys**
Scroll through selections, select the number of copies, and the photograph file number. Fax Model [◄] also clears an entry and [►] enters a space between characters.

⑦ **[Set] key**
Selects or confirms settings.

⑧ **[Enlarge/Reduce] key**
Sets the copy enlargement or reduction ratio.

⑨ **[Paper Select] key**
Selects the paper size and paper type for copying and Fax Model received faxes.

⑩ **[Exposure] key**
Selects the copy exposure and Fax Model fax exposure.

⑪ **[Image Quality] key**
Selects the copy resolution and Fax Model fax resolution.

⑫ **[Copy] key**
Switches the machine to copy mode.

⑬ Fax Model **[Fax] key**
Switches the machine to fax mode.

**Figure 1-6 Operation Panel 1**

⑭ **[Scan] key**
Scans a document to your computer according to the action selected.

⑮ **[Photo Print] key**
Switches the machine to photo card print mode.

⑯ **Numeric keys**
Enter numerical values as well as Fax Model fax/telephone numbers and characters.

⑰ Fax Model **[Tone] ([✳]) key**
Switches temporarily to tone dialing.

⑱ **[Color] key**
Sets the machine for color copying and Fax Model color sending.

⑲ **[Stop/Reset] key**
Cancels operations and returns the machine to standby mode.

⑳ **[Start] key**
Starts operations.

㉑ **[B&W] key**
Sets the machine for black & white copying and Fax Model black & white sending.

㉒ Fax Model **[Redial/Pause] key**
Redials the last number dialed with the numeric keys. Also enters pauses between or after numbers when dialing or registering numbers.

㉓ Fax Model **[Coded Dial] key**
Press this key and a two-digit code to dial a pre-registered fax/telephone number or group.

㉔ Fax Model **[Hook] key**
Engages or disengages the telephone line.

㉕ Fax Model **One-touch speed dialing keys**
Dial a pre-registered fax/telephone number or group.

㉖ **[ON/OFF (1 sec.)] key**
Turns the machine on and off (keep pressed for a brief interval). **Before turning on the machine, make sure the document cover is closed.**

**Figure 1-7 Operation Panel 2**

## 3.3 Consumables

### 3.3.1 Ink tanks

There are four ink tanks:
Black ink tank <BCI-3eBK>
Cyan ink tank <BCI-3eC>
Magenta ink tank <BCI-3eM>
Yellow ink tank <BCI-3eY>

## 3.3.2 Print Media

### Plain paper

You can use normal photocopy paper, Canon Bubble Jet paper (LC-301), or Canon Super White paper (SW-101).

### Envelopes

You can use U.S. Commercial No. 10, and European DL.

- You cannot load envelopes of other sizes than those above.
- Do not use envelopes with double flaps or pressure seals as these do not feed properly.
- Do not use envelopes made with embossed or treated surfaces as print quality will deteriorate.

### High Resolution Paper HR-101N

This type of paper provides better color reproduction than plain paper. It is suitable for printing business documents that feature graphics, and for photographs.

### Glossy Photo Paper GP-301/GP-301N

This media is thicker than High Resolution Paper and has a glossy printing surface to produce printouts close to photograph quality. This paper is suitable for borderless printing.

### Matte Photo Paper MP-101

This is a matte water-resistant paper and provides superior color reproduction. It is suitable for a variety of printing purposes such as paper crafts, calendars and matt photos.

### Photo Paper Plus Glossy PP-101

This is a thick paper with a glossy water-resistant coating and provides superior color reproduction. It is ideal for printing high-quality photographs.

### Photo Paper Pro PR-101

This is thick paper with a treated surface that enhances gloss and provides superior color reproduction. It is ideal for printing high-quality photographs. Also, by using borderless printing, you can print without any white borders.

### Photo Paper Pro PC-101S

This card-size paper for printing photographs is made of the same material as Photo Paper Pro (PR-101). By printing the image beyond the perforations, you can then trim the borders to produce a photograph without any white borders.

### Transparencies CF-102

This film is ideal for printing presentation material for use with overhead projectors.

### T-Shirt Transfers TR-201

This paper is used to produce iron-on transfers.

# Chapter 2

# Technical Reference

# 1. COMPONENT LAYOUT

The parts layout of this machine consists of the scanning assembly.

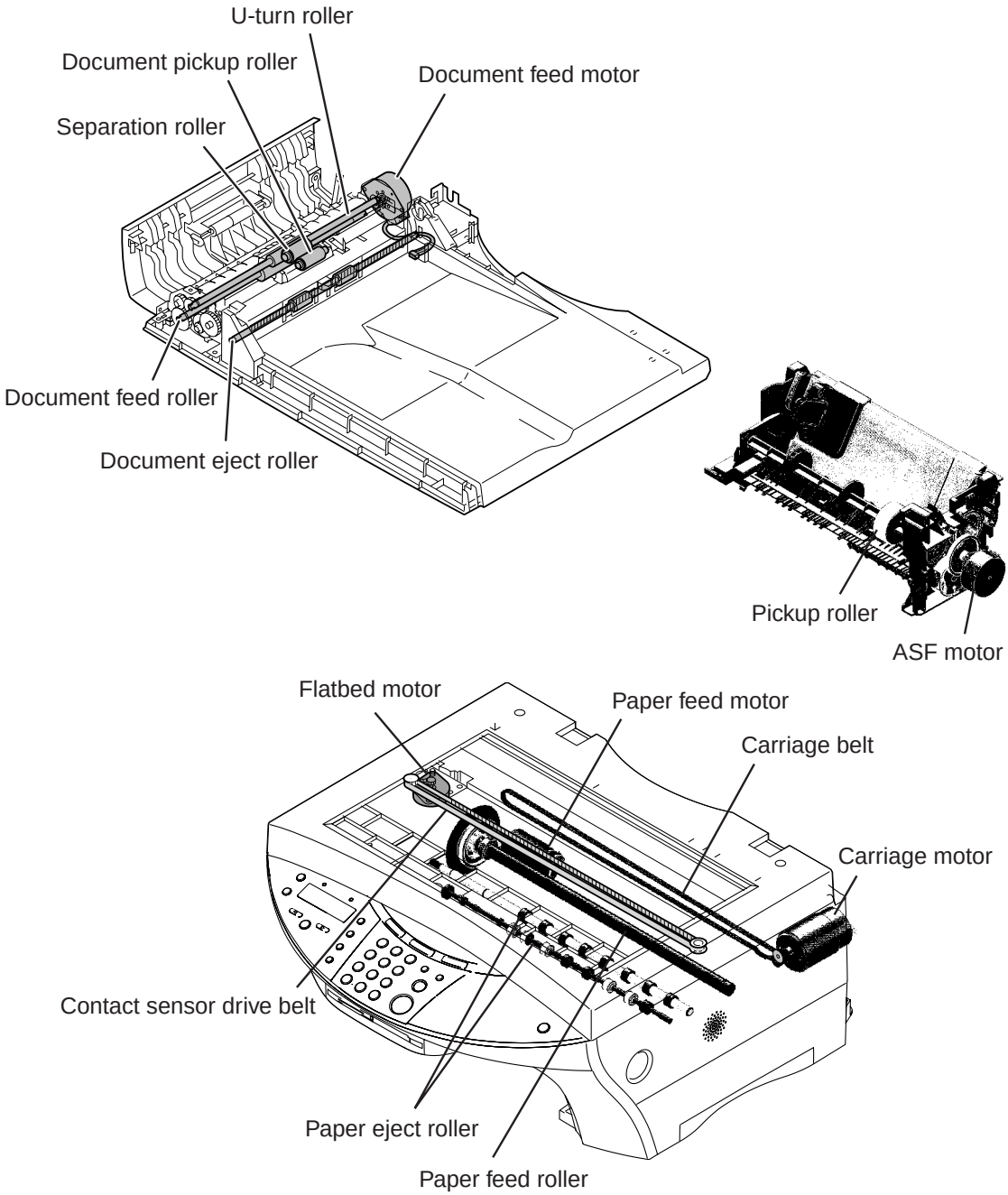



**Figure 2-1 Mechanical Layout**

The electrical parts are laid out as follows.
- SPCNT board : Controls the entire facsimile machine.
- OPCNT board : Detects keyboard operation and displays machine information.
- Multi-card reader board : Interface with memory card.
- Sensor board (include sub PCB) : Detects the state of sensors, and relays the cable to the printer assembly.
- Power supply unit : Supplies power to the units and assemblies.
- NCU board (MP730 only) : Controls the telephone line.
- Modular board (MP730 only) : Relays the telephone line to the NCU board.
- ADF board (MP730 only) : Interface from ADF assembly.

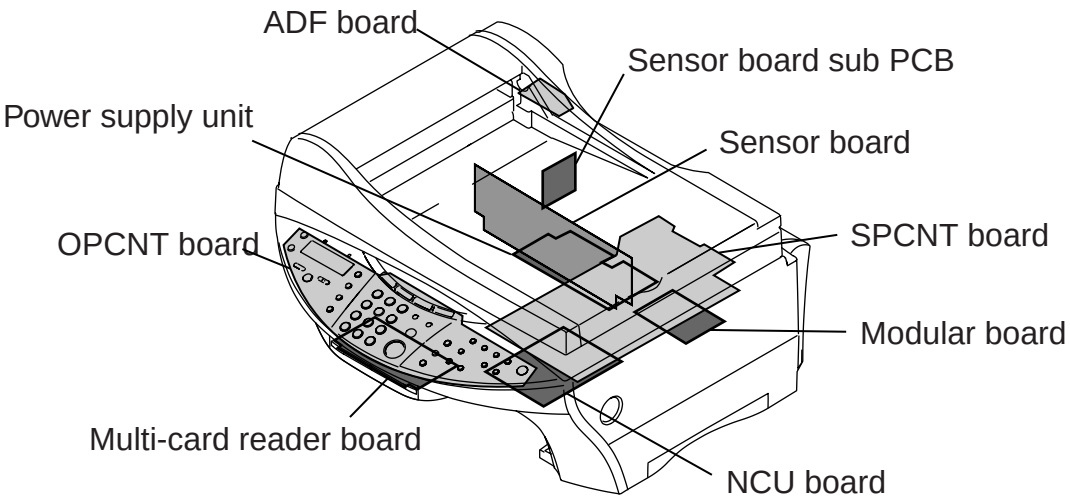



**Figure 2-2 Electrical Layout**

The sensors detecting document/paper-fedding condition or ink presence/absence are mounted.

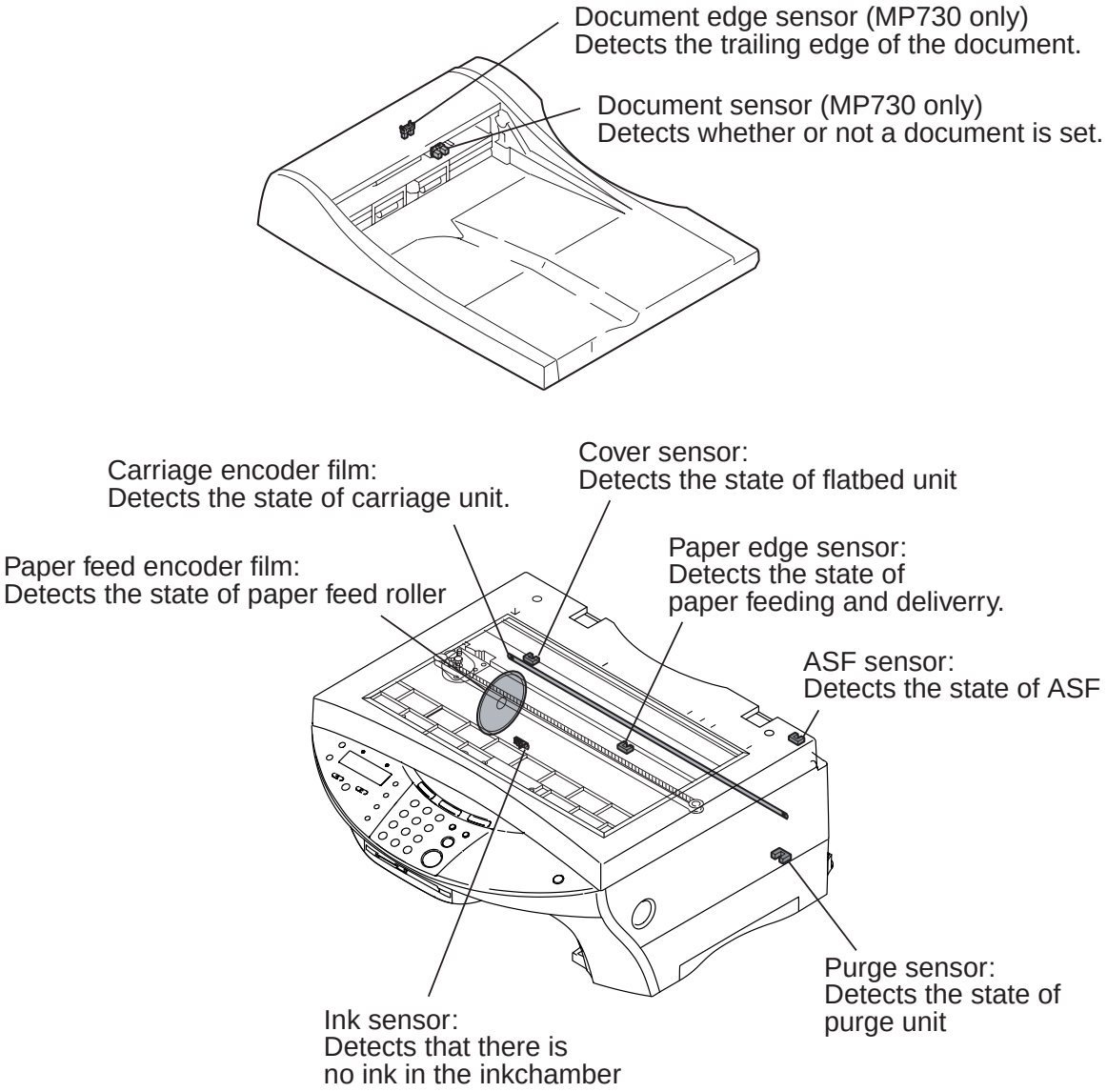

Document edge sensor (MP730 only)
Detects the trailing edge of the document.
Document sensor (MP730 only)
Detects whether or not a document is set.
Carriage encoder film:
Detects the state of carriage unit.
Cover sensor:
Detects the state of flatbed unit
Paper feed encoder film:
Detects the state of paper feed roller
Paper edge sensor:
Detects the state of
paper feeding and deliverry.
ASF sensor:
Detects the state of ASF
Purge sensor:
Detects the state of
purge unit
Ink sensor:
Detects that there is
no ink in the inkchamber

**Figure 2-3 Sensor Layout**

# 2. SCANNING SECTION

The scanning section scans documents that are to be sent or copied.

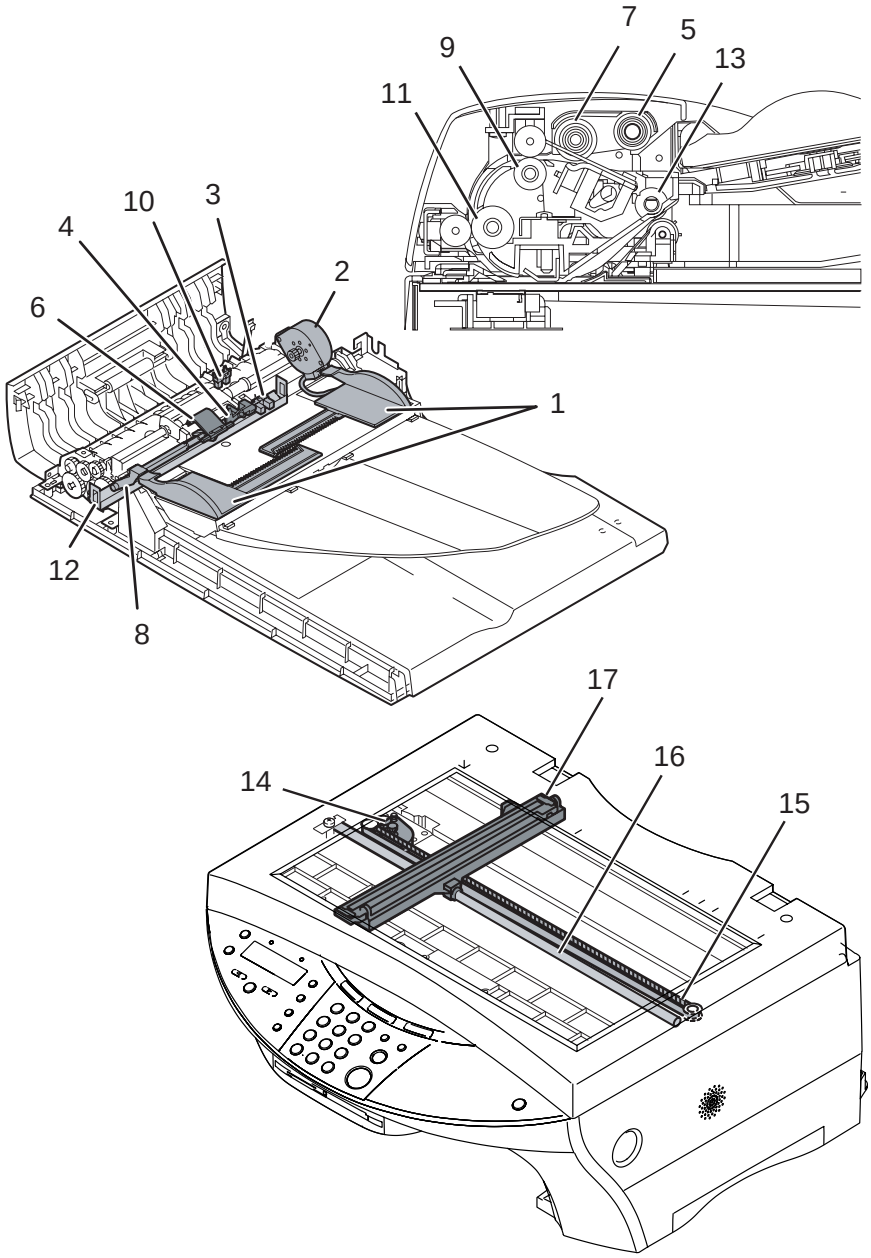



**Figure 2-4 Scanning Section**

## Names and function of parts

### 1. Document Guide (MP730 only)

When properly adjusted to the width of the documents, the guide will hold documents in the horizontal direction to prevent them from skewing when fed.

### 2. Document feed motor (MP730 only)

This motor drives all the rollers in the scanning sections.

### 3. Document Sensor (MP730 only)

This sensor uses an actuator to detect the presence of documents to be scanned, and sends that information to the SPCNT board by the way of the ADF board.

**4. Document stopper (MP730 only)**

This stopper is located to the side of the separation rollers, and prevents documents from entering too far inside the scanning section. This stopper is located here to improve document loading and prevent double feeding or non-feeding due to defective loading of documents.

**5. Document pickup roller (MP730 only)**

The document pickup roller is used to pick up a document and feed it to the separation roller.

**6. Separation guide (MP730 only)**

Separates the documents to prevent double-feeding.

**7. Separation roller (MP730 only)**

This roller uses difference in the coefficients of friction of the separation guide, document and

separation roller to separate each of the sheets in a multiple-page document.

**8. Document release lever (MP730 only)**

This lever switches between automatic document feed and manual document feed. Damage to the document caused by the separation roller can be minimized by switching to the manual document feed position when sending single sheets such as thick-stock paper or photographs.

**9. U-Turn roller (MP730 only)**

The U-turn roller is used to feed a document to the document feeder roller.

**10. Document edge sensor (MP730 only)**

Using an actuator, the DES detects the edge of a document just before it reaches the contact sensor, and sends this information to the SPCNT board.

**11. Document feed roller (MP730 only)**

This roller feeds documents to the contact sensor after they are separated by separation roller.

**12. Document retainer (MP730 only)**

This retainer prevents a document from its floating while scanning.

**13. Document eject roller (MP730 only)**

This roller ejects documents fed from the document feed roller.

**14. Flatbed motor**

The flatbed motor is used to drive the contact sensor.

**15. Contact sensor drive belt**

The contact sensor drive belt is used to covey the driving force of the flatbed motor to the contact sensor.

**16. Contact sensor shaft**

The contact sensor shaft is used to keep the direction of the driving force of the contact sensor.

**17. Color contact sensor**

The color contact sensor scans the image data from the document, converts it to Red, Green and Blue serial data, and transmits it to the SPCNT board as electrical signals.

# 3. PRINTER SECTION

## 3.1 Printer Mechanical Section

The printer's mechanical parts consist of the carriage section, purge section, and paper feed section. Each part is explained below.

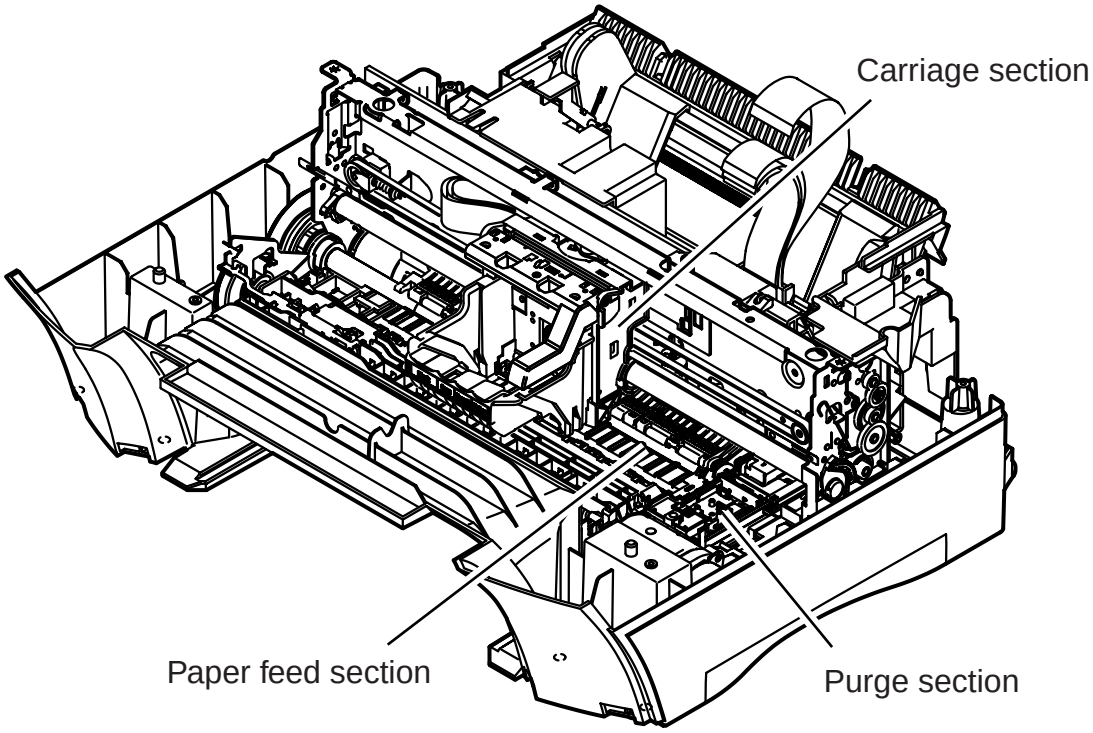



**Figure 2-5 Printer Mechanical Section**

### 3.1.1 Carriage section

The carriage secures the printhead including 4 ink tanks in place.

The carriage belt driven by the carriage motor (DC motor) moves the carriage horizontally back and forth across the paper.

Regarding the carriage's position control, the initial position is detected when the carriage goes against the right wall which is the home position. After that, the carriage position is detected by reading the pulse from the encoder film.

The paper spacing position is read from the carriage position when the carriage goes against the left wall.

### 3.1.2 Purge Section

The purge section, driven by a dedicated purge motor, consists of the wiper, pump, cap, and carriage lock.

The wiper maintains the head face surface to ensure high-quality printing. The ink suction feature enables the ink to be readily ejected from the nozzles.

When the BJ cartridge is not in use, the nozzles are protected by a cap, and the carriage is locked in place.

The motor's running direction controls the ink suction operation or capping/wiping/valve open/closing operation.

### 3.1.3 Paper feed section

The paper feed section consists of the paper loading section, paper feed section, and paper eject section.

#### a) Paper loading section

Paper is loaded automatically by the ASF (auto sheet feeder).

The ASF is driven by the ASF motor. Paper of various sizes up to legal size can be stacked and loaded automatically (the paper is transported to the paper feed section).

#### b) Paper feed section

The paper feed section, driven by the paper feed motor, keeps the sheet of paper flat and horizontal on the platen and rotates the feed roller to move the paper horizontally to and beneath the printhead.

#### c) Paper eject section

After printing, paper is ejected onto the eject tray by the eject rollers.

After the sheet of paper leaves the paper feed rollers, the eject rollers take over to eject the paper.

## 3.2 About the Ink Sensor

onsisting of an LED and photo sensor, the ink sensor uses optical means to detect whether there is ink in the ink tank.

At the bottom of the ink tank is an indentation that works like a prism.

When there is ink in the ink tank, the refractive index of the ink and the prism's resin material is about the same. Therefore, the reflected amount of light is small. When the ink is exhausted, the refractive index of the air and the prism's resin is very different, so all the light entering the sensor is reflected and the amount of reflected light is high.

The ink sensor detects the difference in the reflected light amount to determine whether or not there is ink in the tank. The MPU detects the voltage that changes according to the change in the reflected light amount. The analog value that is input is converted to a digital value by an internal A/D converter.

When the machine detects no ink in the ink tank, it starts to count the number of ejected dots corresponding to the amount of ink (about 20% of the ink amount) in the sponge and it starts to detect the no-ink error.

This error is detected in the following cases: While the power is ON, when the flatbed ass'y is closed, after the pumping operation, or after the set number of dots have been printed. If the flatbed ass'y is opened during the ink amount measurement, the external light may prevent an accurate measurement. The presence of an ink tank will also not be detected. If there is no ink tank, there will be no reflected light and the machine will therefore assume that there is ink.

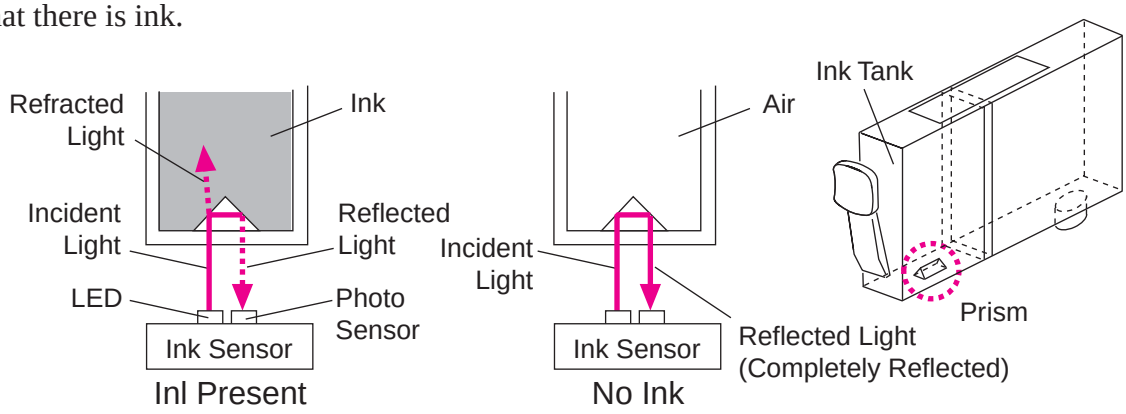



**Figure 2-6 Ink Sensor**

NOTE

**Correctly Detecting the Absence of Ink**

The mechanisms of the product are designed in such a way that the following operations can at times prevent the correct detection of the absence of ink, not printing received images and, as a result, generating a blank output.

- While ink is present, the flatbed ass'y is opened, the ink tank is removed, and the flatbed ass'y is closed without putting back the ink tank.
- While ink is present, the flatbed ass'y is opened, the ink tank is removed, and the flatbed ass'y is closed after improperly putting back the ink tank (i.e., without hearing a clicking sound).
- While ink is present, the flatbed ass'y is opened, and the flatbed ass'y is closed after fitting an ink tank whose ink chamber is empty.

## 3.3 Cleaning Mode and Suction Amount

Printhead cleaning is performed effectively and efficiently depending on conditions in order to prevent print errors caused by bubble, dust, or ink clogging.

Cleaning is performed before starting to print except at the following timing:

- Dot count suction : Performed after paper ejection
- Manual cleaning/refreshing : Performed user operation
- Unit delivery : Performed when scanner unit is closed

| Condition | Details | Suction amount BK/CL(g) |
|---|---|---|
| Printhead cleaaning | User operation. | 0.14/0.36 |
| Printhead refreshing | User operation. | 1.58/0.72 |
| Timer suction | If 24 to 336 hours have elapsed since previous suction (BK).<br>If 120 to 336 hours have elapsed since previous suction (CL). | 0.14/0.36 |
| Long timer suction 1 | If 336 hours or more have elapsed since previous suction. | 0.45/0.72 |
| Long timer suction 2 | If 1080 hours or more have elapsed since previous suction. | 0.78/0.72 |
| Long timer suction 3 | If 2160 hours or more have elapsed since previous suction. | 1.58/0.72 |
| Long timer suction 4 | If 4320 hours or more have elapsed since previous suction. | 1.58/0.72 |
| Dot count suction | When prescribed dot count since the last suctionis reached. | 0.14/0.36 |
| When replacing printhead | When printhead is removed/installed. | 0.45/1.08 |
| When replacing ink tank | Ink sensor detects that ink is present ink tank<br>-> That is the state changed from no ink in the ink tank. | 1.58/0.72 |
| At delivery or during first head position adjustment | Suction when head is first installed after factory shipment. | 0.45/1.08 |
| Uncapped when Soft ON | When capping was not performed properly during last power off. | 0.30/0.72 |

# 4. NEW FUNCTION

There is no new function in this model.

# Chapter 3

# Assembly and Disassembly

# 1. ATTENTION TO BE PAID DURING ASSEMBLY/DISASSEMBLY

## 1.1 Safety Cautions

### Electrical shock

In order to prevent any risk of electrical shock, always be sure to check that the power cord and modular jack have been removed. Also, remove all cables connecting to the computer. When conducting service that requires the main unit to be powered on, be sure to wear some kind of earthing, such as a wrist strap, etc. Otherwise, there is a danger of conduction and electrical shock.

Parts which are generally likely to cause electrical shock are as follows.

- Power supply unit primary (supplied with AC voltage)
- Telephone line primary
- LBP engine high voltage contacts (for high voltage during developing and transfer)

### High temperature

In order to prevent burns during disassembly, allow at least ten minutes, after the power has been switched off, for the high temperature components to cool down.

General high temperature components are as follows.

- Motors
- Power supply unit
- Elements on driver ICs, etc., on PCBs (in particular, ICs with heatsinks)
- BJ cartridge aluminium plate (for BJ cartridge engine models)
- Fixing unit and peripheral covers (for LBP engines)

### Battery Replacement

The batteries must be replaced correctly to avoid explosion. Do not replace any battery with one not indicated for the machine, ie., use one of the same type or equivalent. Be sure to dispose of used batteries according to local laws and regulations.

### Fire

It is dangerous to throw lithium batteries and parts and components containing flammable substances, such as cartridges, etc., into fire. Such parts and components must be disposed of in accordance with local laws and regulations.

### Ignition

When using solvents such as alcohol, etc., while conducting service, there is a danger of fire igniting from heat from internal circuitry and from sparks. Before using any such solvents, be sure to switch off the power and allow time for high temperature parts to cool down. Make sure that there is sufficient ventilation when working with solvents.

### Movable parts

In order to prevent accidents with movable parts, be sure to remove the power cable when conducting service that requires disassembly. Also, take care that personal accessories and hair, etc., are not caught in any moving parts.

## 1.2 General Cautions

### Damage due to electrostatic discharge

This machine contains contact sensors and printed circuit boards that use ROMs, RAMs, custom chips and other electronic components that are vulnerable to damage by electrostatic discharge.

Be careful to avoid any damage from electrostatic discharge when conducting service that requires disassembly.

**Static electricity warning**

Electrostatic discharge can destroy electronic components and alter electrical characteristics. Plastic tools and even your hands, if they are not earthed, contain sufficient static electricity to damage electronic components.

The following materials may be used as countermeasures against electrostatic discharge:

- an earthed, conductive mat,
- an earthed wrist-strap,
- crocodile clips for the purpose of grounding metallic parts of the main unit.

For service conducted on the user's premises, etc., where such countermeasure materials are not available, the following countermeasures may be employed.

- Use anti-static bags for the storage and carrying of PCBs and electrical elements.
- Avoid silk and polyester clothing and leather soled shoes, favouring instead cotton clothes and rubber soled shoes.
- Avoid working in a carpeted area.
- Before beginning the work, touch the grounded earth terminals of the main unit in order to discharge any static electricity.
- Use a wrist-strap and earth the metal parts of the main unit.
- PCBs and electrical elements must lifted around the edges and their terminals must not be touched.

**Caution against electrical shock while working with power on**

In cases where service must be carried out with power on, via a connected power cable, be sure to wear an anti-static wrist-strap or other earth, in order to prevent an electrical path being created through your body.

### Application of grease

Grease must not be applied to any parts that are not so designated. If grease comes into contact with the rubber cap of the purge unit or wire, the BJ cartridge nozzle may become blocked and the cartridge rendered unusable. Also, never use any other than the specified type of grease. Otherwise, plastic parts and rubber parts may melt or be otherwise deformed.

### Attaching and removing cables

Attaching and removing cables with the power still on may cause breakdowns and should be avoided. In particular, flat cables are likely to cause short circuits. When attaching or removing cables, always be sure to turn the power off.

## 1.3 Product-Inherent Cautions

### 1.3.1 Prevention of ink-soiling

Be careful when handling the BJ ink cartridge nozzle, the ink pad, head cap, head wiper and waste ink pad. Residual ink may soil the main unit, working surfaces, your hands and clothes, etc. The ink is water-soluble, but because it contains pigments, it will not wash out of clothes.

The ink does not contain any substances that are harmful to humans, but does contain organic solvents (isopropyl alcohol 67-63-0, diethylene glycol 111-46-6, glycerin 56-81-5 and ethylene glycol 107-21-1). If the ink should accidentally get into someone's eyes, rinse the affected eye with plenty of clean water and seek medical attention. If a large quantity of ink is accidentally swallowed, seek medical advice immediately. In such a case, let the doctor know exactly what is written on the BJ cartridge label.

### 1.3.2 Conductivity of the ink

The ink used in the BJ cartridge is conductive. This means that, if the ink leaks, mechanical parts should be wiped with a dampened paper towel or similar and electrical circuits wiped with tissue paper so that all ink is removed from below the IC chips.
If power is switched on while ink is leaking on the electrical circuits, the circuitry may short out and be damaged. If ink is leaking, the power must be switched off.

## 1.3.3 Caution when replacing the SPCNT board

To replace the SPCNT board, perform the following:

### a) Caution before replacing

You will need to execute 'All clear' after replacement. Be sure to print out the following data as necessary.

#### a-1) Image Data Stored in the Image Memory

The image data stored in the image memory will be lost as soon as the power is turned off. Check to be sure that all data has been printed out before turning off the power.

#### a-2) User reports

Press the Menu key; then, use the ◀ ▶ key to select 'REPORT/LIST', and use the ◀ ▶ key to select the type of list to print out.

#### a-3) Service reports

Select service data mode; then, use the ◀ ▶ key to select 'SERVICE REPORT', and use the ◀ ▶ key to select the type of list to print out.

### b) Caution after replacing

(1) When you have replaced the SPCNT board, be sure to execute 'All clear'. For instructions, see 1.4 All Clear (Action in the Event of Abnormality).

(2) After you have executed 'All clear', enter the appropriate data as necessary by referring to the list you have previously printed out.

## 1.3.4 Caution when replacing the ROM

To replace the ROM, perform the followwing:

### a) Caution before replacing

You will need to execute ‘All clear’ after replacement. Be sure to print out the following data as necessary.

#### a-1) Image Data Stored in the Image Memory

The image data stored in the image memory will be lost as soon as the power is turned off. Check to be sure that all data has been printed out before turning off the power.

#### a-2) User reports

Press the Menu key; then, use the ◀ ▶ key to select ‘REPORT/LIST’, and use the ◀ ▶ key to select the type of list to print out.

#### a-3) Service reports

Select service data mode; then, use the ◀ ▶ key to select ‘SERVICE REPORT’, and use the ◀ ▶ key to select the type of list to print out.

### b) Caution after replacing

(1) If you have replace the ROM because of a fault in a ROM element, you may end the work by turning on the power after assembling the machine.

(2) If you have replaced the ROM for upgrading that involves changes to the service data, user data, or soft witches, you need to execute 'All clear' (because the memory backed up by the battery retains previous settings). For instructions, see 1.4 All Clear (Action in the Event of Abnormality). After you have executed ‘All clear’, enter the appropriate data as necessary by referring to the list you have previously printed out.

### 1.3.5 Removal of red screws prohibited

Since adjustment of the following red screws is very difficult in the field, they must not be loosened or removed.

(a) The two paper spacing red screws (one on the right and left).

(b) The two screws securing the paper feed motor.

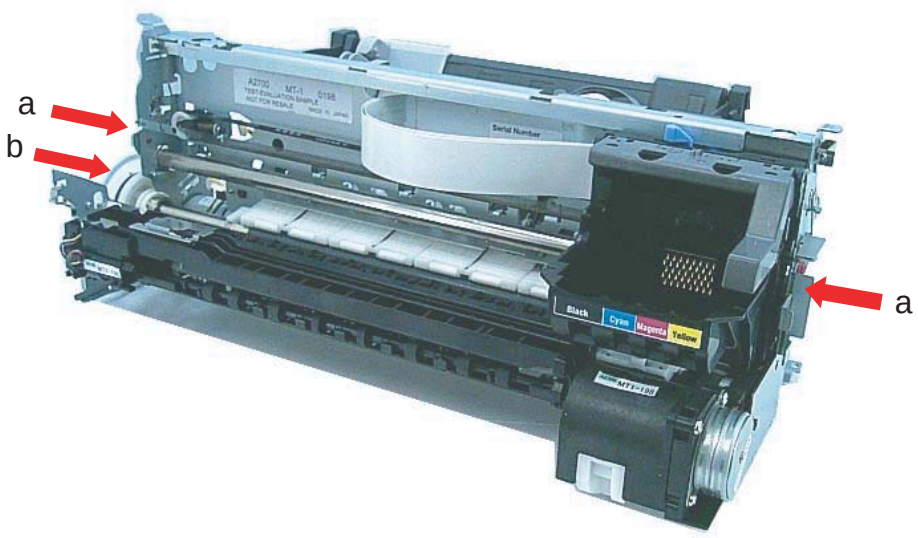



**Figure 3-1 Do not Remove the Red Screws**

### 1.3.6 Caution when release the carriage lock

If the printer has been turned off while the cartridge remains fitted to the carriage, the carriage is always locked in capping position.

If the printer does not operate normally, be sure to unlock the carriage manually. To do so, turn the gear shown in the figure in the direction of the arrow.

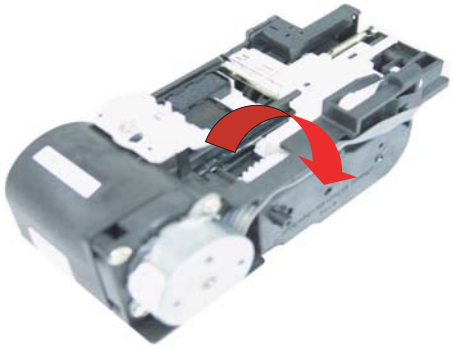


**Figure 3-2 Release the Carriage Lock**

## 1.3.7 Caution when handling the carriage encoder film

### (1) Do not leave grease on the cartridge encoder film (code strip)

The presence of grease will prevent correct reading of the slit in the carriage encoder film, thus causing an error.

If grease is found on the carriage encoder film, clean it thoroughly using alcohol.

### (2) Do not bend or scratch the carriage encoder film (code strip).

If the carriage encoder film has been bent until it shows a white line or a scratch is found on it, replace it.

### (3) Stretch the leaf spring excessively when removing/fitting the carriage encoder film (code strip).

The carriage encoder film is secured in place under tension by means of a leaf spring.

Take care. if the spring is stretched excessively in the direction of the arrow, you will not be able to secure the cartridge encoder film correctly next time.

You will have to stretch the leaf spring, but do not do so in excess when removing or fitting it.

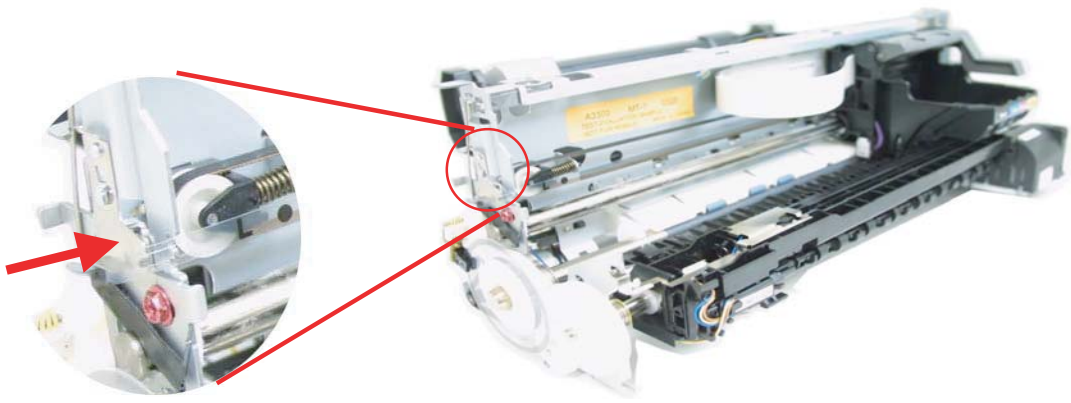


**Figure 3-3 Handling the Carriage Encoder Film**

## 1.3.8 Caution when replacing the waste ink absorber

The waste ink absorbers are designed to sop up any excess ink ejected during the cleaning operation or during ink squirting for maintenance, in order to maintain the good printing quality of the BJ cartridge. The volume of ink absorbed is counted and these data stored in the EEPROM on the SPCNT board. Once the volume is judged to have reached 100%, the message "CHECK PRINTER" (error code ##342) will be displayed, and printing will stop, in order to ensure that the volume of ink absorbed does not exceed the allowed limit. To clear this error, you need to replace the waste ink absorbers and reset the waste ink volume counter. Refer to page 4-23, Action for ##342, for details on how to reset the waste ink volume counter.

## 1.4 All Clear (Action in the Event of Abnormality)

In the event of extreme noise or shock, etc., in very rare cases, the display may go out, and all the keys become inoperable. In that case, perform an All Clear. This operation returns all values and settings to their default settings. However, as all settings, such as received images and user data, service data, etc., will be re-initialised, be sure to note down any settings that you will need to re-enter later.

After you have executed 'all clear', set the type setting (country setting).

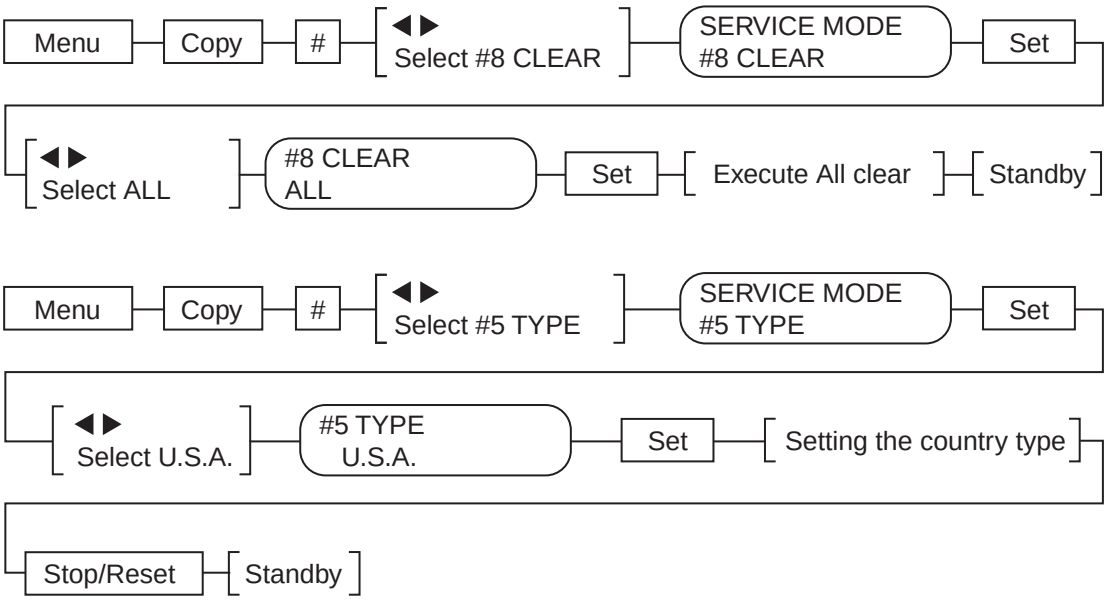



**Figure 3-4 All Clear Operation**

## 1.5 Shipping the Main Unit

If you must ship the machine as after making repairs, be sure to go through the following:

(1) See to it that the BJ cartridge (printhead) remains fitted in the carriage.

(2) Press the On/Off key to turn off the power, and fix the carriage in its home position; then, disconnect the power cord.

If you leave the BJ cartridge (printhead) alone on its own, the ink can start to cake. Be sure to keep the BJ cartridge fitted in the carriage in the course of shipment.

On the other hand, if the carriage is not fixed to its home position, it can move right/left during shipment, possibly imposing stress on the paper feed encoder film. Check to make sure it is fixed in its home position.

# 2. DISASSEMBLY/ASSEMBLY

As a rule, refer to the Parts Catalog for instructions on how to disassemble and assemble the machine. The discussions that follow are limited to those components that are thought to require replacement relatively more often than others.

## 2.1 Disassembly Procedure

### 2.1.1 SPCNT board (Replacing the ROM), NCU board

(1) Push the button, and open the flatbed ass'y.

(2) Remove the 2 screws (a), and detach the SPCNT cover. (You are now ready to replace the ROM.)

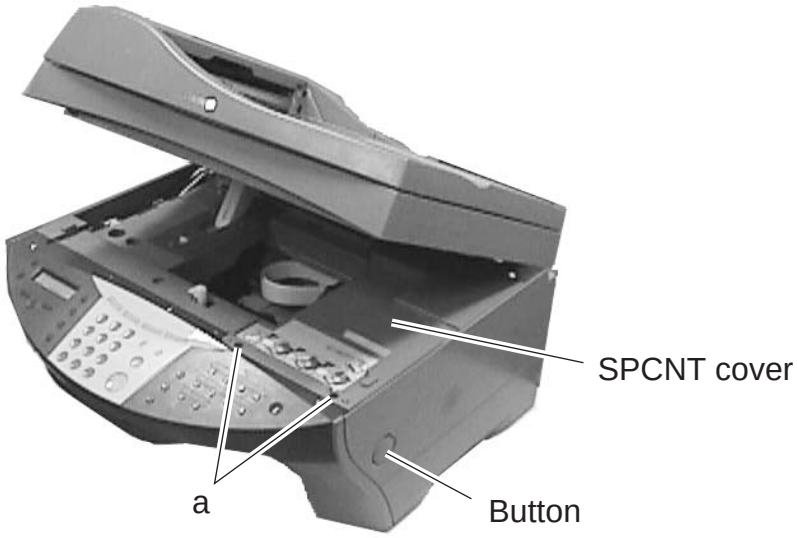



**Figure 3-5 SPCNT board, NCU board 1**

(3) Remove the joint shaft. Be sure to free the claw while doing so.
(4) Remove the torsion bars, and open the flatbed ass'y. Do not impose force on the flatbed ass'y; otherwise, the hinge part may break.
(5) Disconnect the connectors JCARD1, JPANEL1, JNCU1, JNCU2, JSPK1, JPSU1, JCS1, JEXT1, JEXT2, CN201, CN202, and CN203 of the SPCNT board. (The connectors of the MP700 are JCARD1, JPANEL1, JPSU1, JCS1, JEXT1, JEXT2, CN201, CN202, and CN203.)
(6) Remove the 5 screws (b), and detach the SPCNT board.

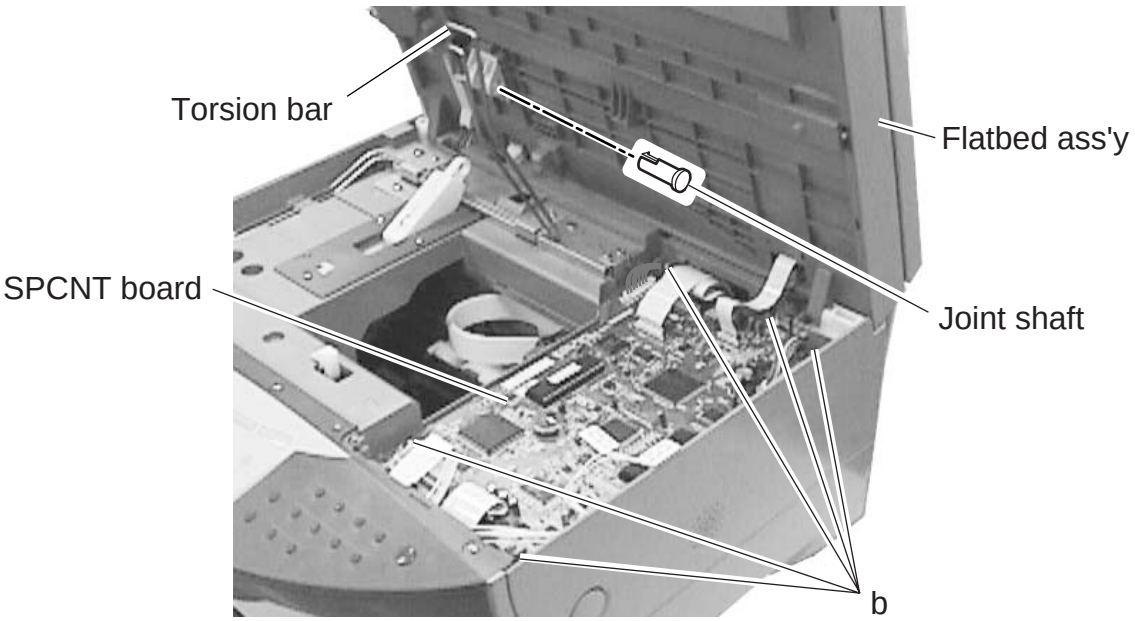



**Figure 3-6 SPCNT board, NCU board 2**

To disassemble the MP730, perform steps (7) through (10).
(7) Remove the 2 screws (c), and detach the grounding cable.
(8) Remove the 3 screws (d), and detach the SPCNT shield plate.

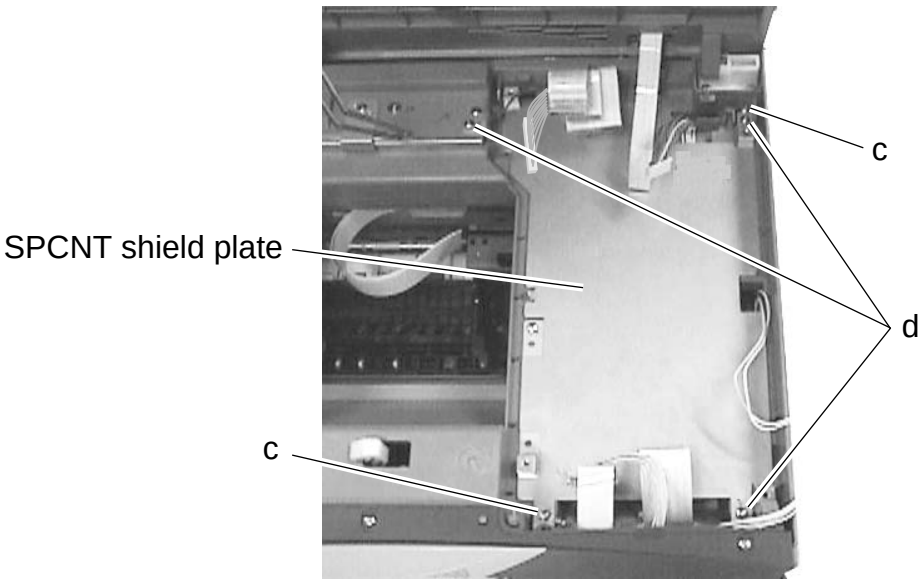



**Figure 3-7 SPCNT board, NCU board 3**

(9) Disconnect the connectors J1, J3, and J10 of the NCU board.
(10) Remove the 2 screws (e), and detach the NCU board.

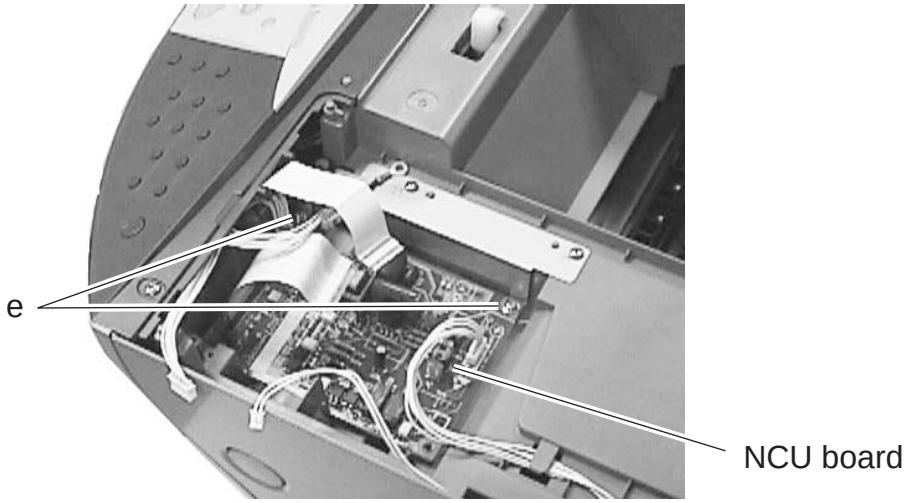



**Figure 3-8 SPCNT board, NCU board 4**

## 2.1.2 Operation panel unit

(1) Push the button, and open the flatbed ass'y.
(2) Remove the 2 screws (a), and detach the SPCNT cover.

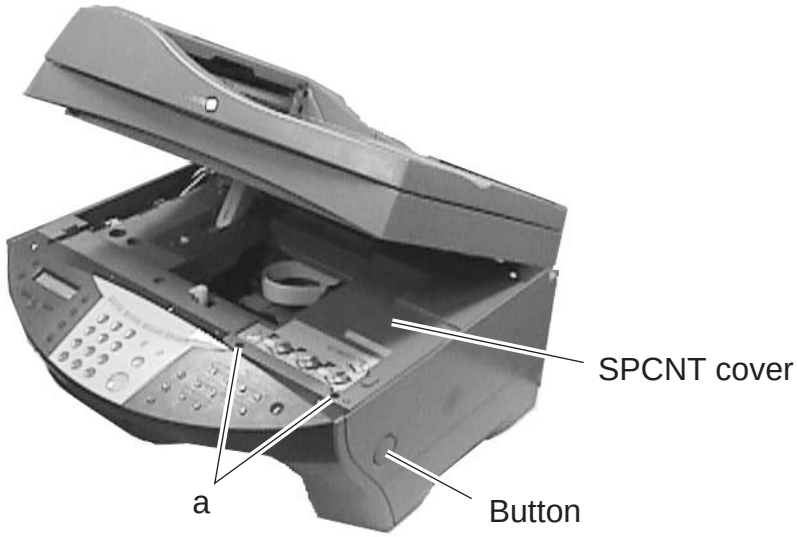



**Figure 3-9 Operation Panel Unit 1**

(3) Disconnect the connector JPANEL1 of the SPCNT board.
(4) Remove the 3 screws (b), and detach the operation panel unit.

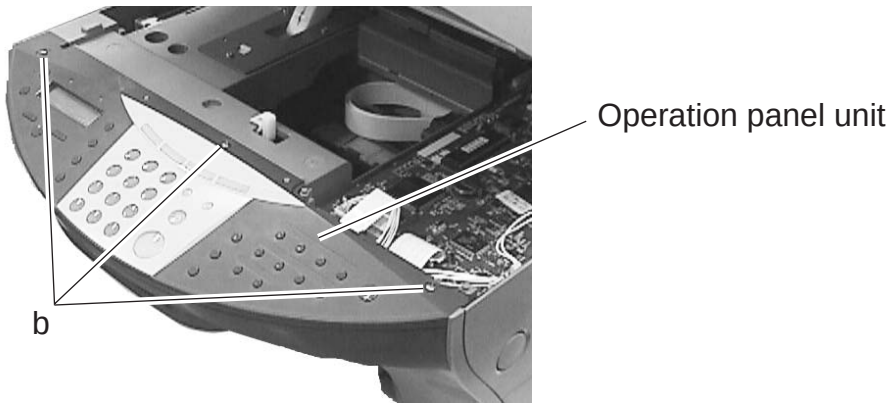



**Figure 3-10 Operation Panel Unit 2**

### 2.1.3 Contact sensor

To disassemble the MP730, perform steps (1) through (4).

(1) Remove the 4 screws (a); then while freeing the claw, detach the rear cover.

(2) Remove the screw (b), and detach the grounding cable.

(3) Disconnect the connector JADF3 of sensor board sub PCB.

(4) Detach the cable guide from the main unit, and lift the ADF ass'y to detach. (The cable is shown freed from the cable guide in the figure; however, do not free it in the field.)

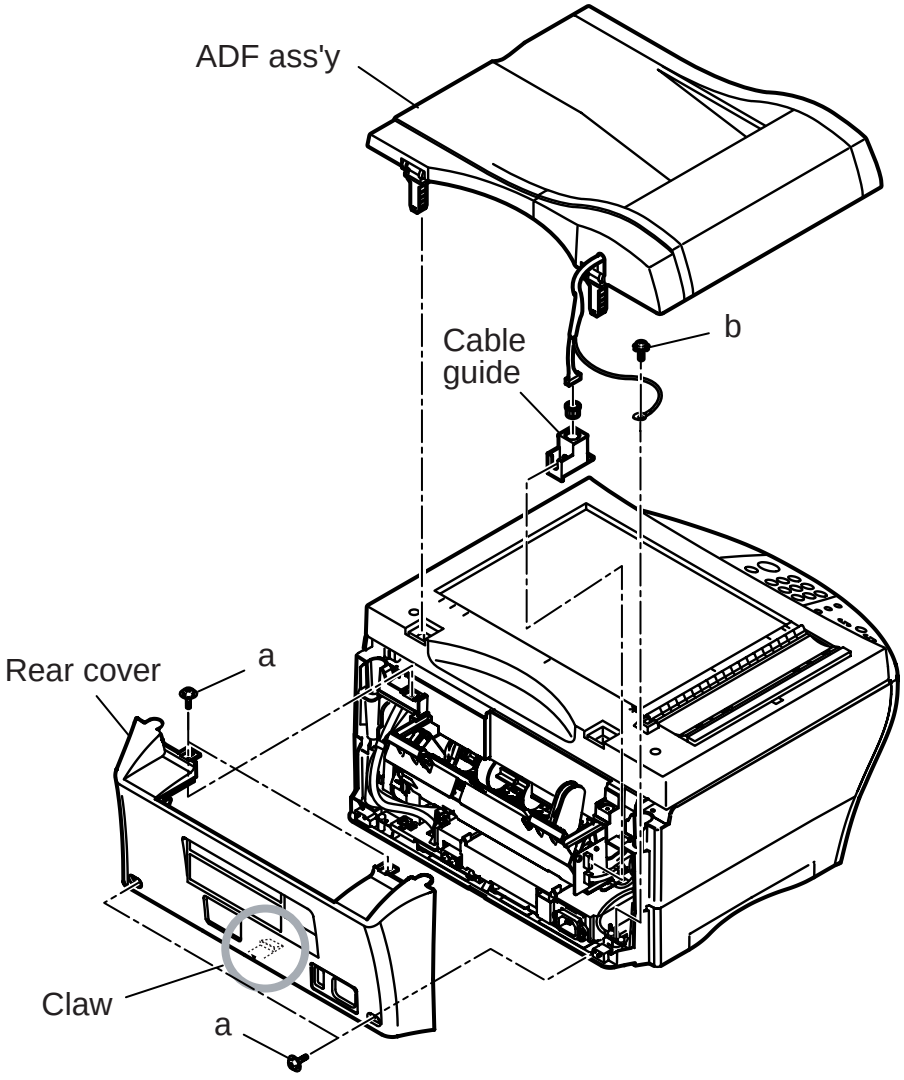



**Figure 3-11 Contact Sensor 1**

To disassemble the MP700, perform steps (5) through (6).
(5) Remove the 4 screws (c); then while freeing the claw, detach the rear cover.
(6) Lift the pressure plate to remove.

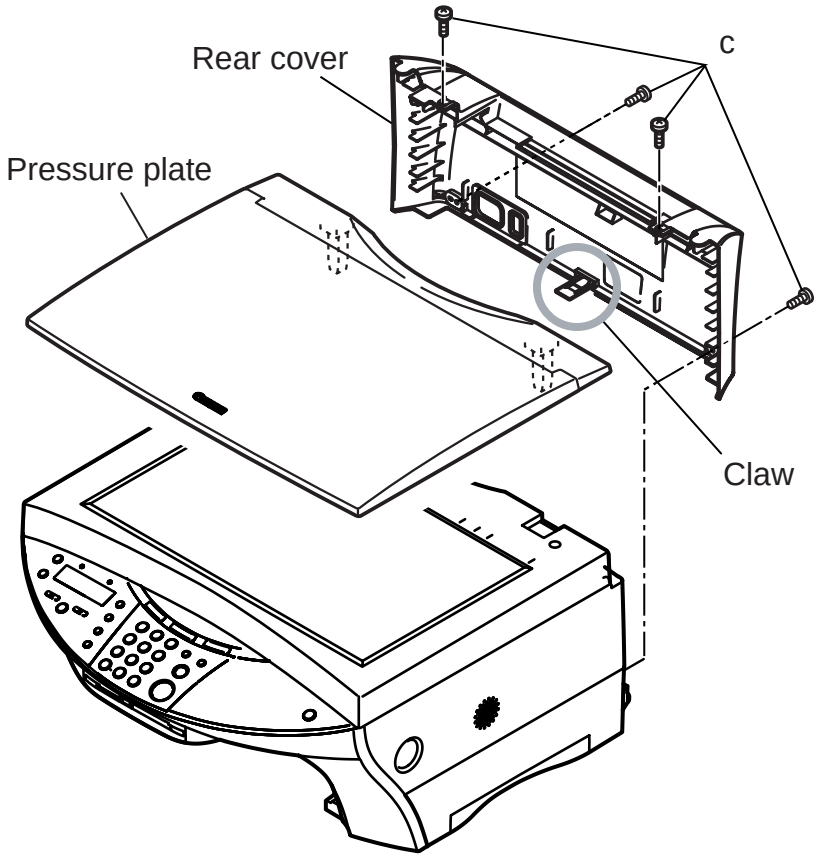



**Figure 3-12 Contact Sensor 2**

(7) Remove the screw (d), and detach the grounding cable.
(8) Disconnect the connector JFBM3 of sensor board sub PCB.
(9) Push the button, and open the flatbed ass'y.
(10) Remove the 2 screws (e), and detach the SPCNT cover.
(11) Disconnect the connector JCS1 of the SPCNT board.
(12) Remove the joint shaft. Be sure to free the claw while doing so.
(13) Remove the torsion bars.
(14) Remove the flatbed ass'y.

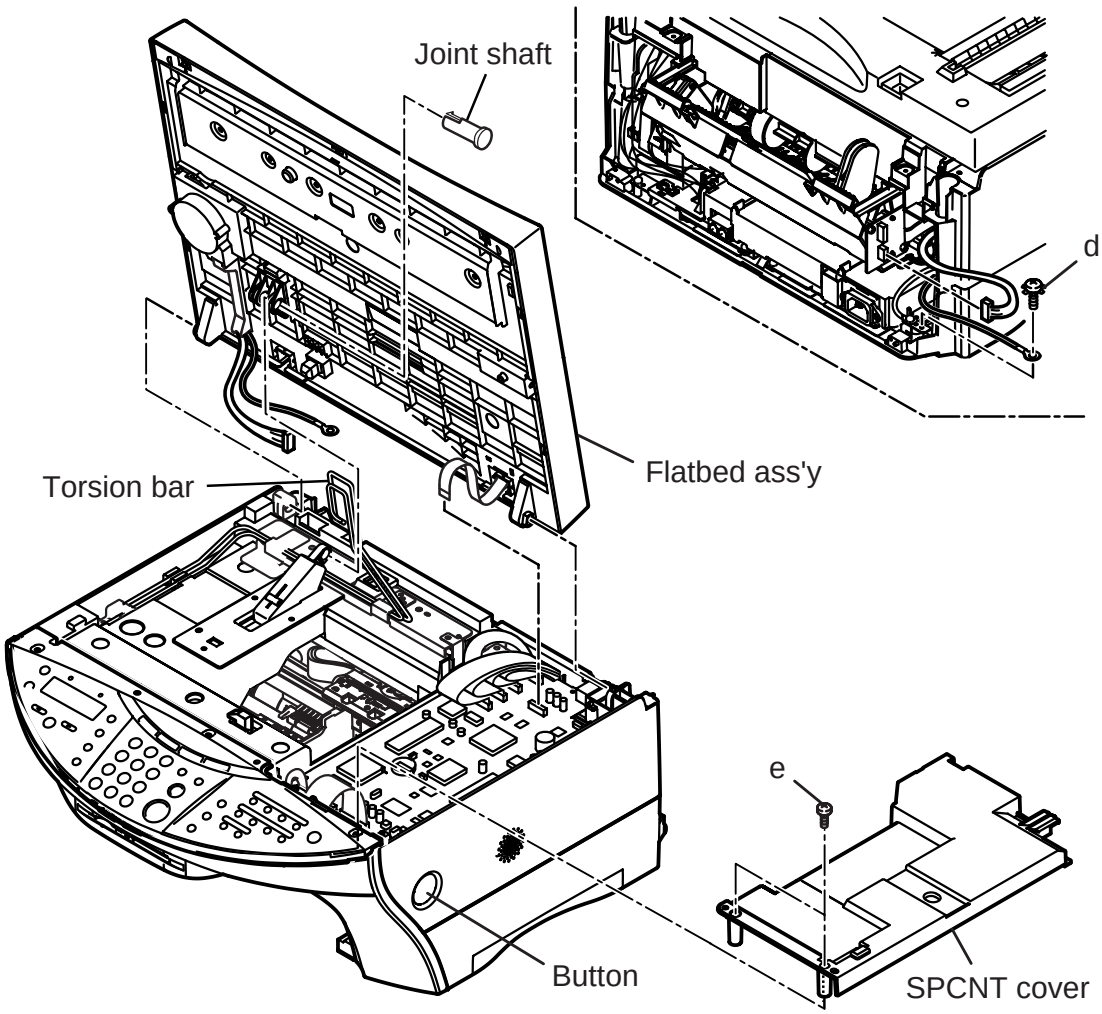



**Figure 3-13 Contact Sensor 3**

(15) Remove the 2 screws (f).
(16) Free the claw (g), and detach the scanner cover. At this time, take care not to drop the document glass.
(17) Detach the document glass.
(18) Remove the flat cable stopper.
(19) Remove the contact sensor from the contact sensor holder. At this time, take care not to lose the spacer.

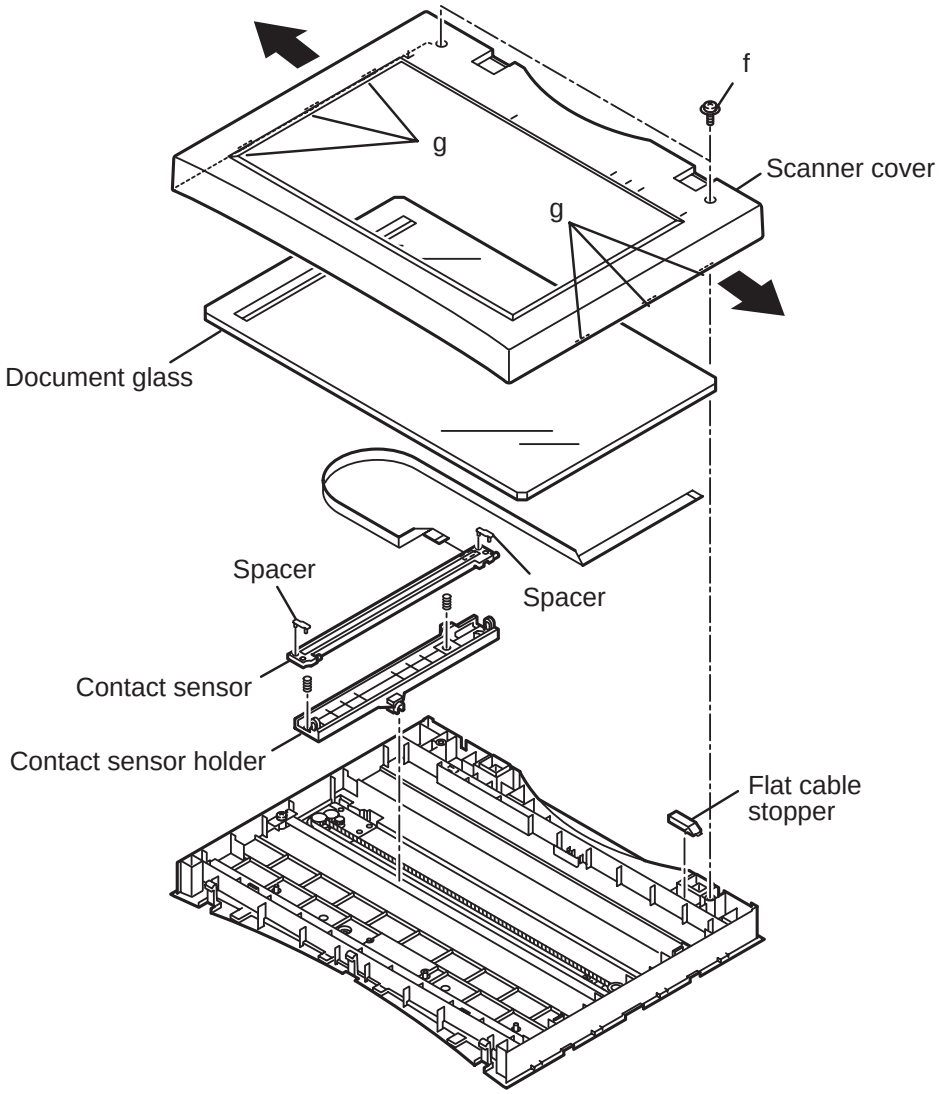



**Figure 3-14 Contact Sensor 4**

**Handling the contact sensor**

Be careful not to scratch or soil the glass surface of the contact sensor. Any such scratches or dirty marks may lead to image defects, such as vertical streaks, etc., on the scanned image.

**Caution when replacing the contact sensor**

When replacing the contact sensor, the CS LED light-on duration needs to be adjusted. Refer to Chapter 4, 3.1 CS LED Lights-on Duration Adjustment, for details.

## 2.1.4 Print and ASF ass'y

To disassemble the MP730, perform steps (1) through (4).

(1) Remove the 4 screws (a); then while freeing the claw, detach the rear cover.

(2) Remove the screw (b), and detach the grounding cable.

(3) Disconnect the connector JADF3 of sensor board sub PCB.

(4) Detach the cable guide from the main unit, and lift the ADF ass'y to detach. (The cable is shown freed from the cable guide in the figure; however, do not free it in the field.)

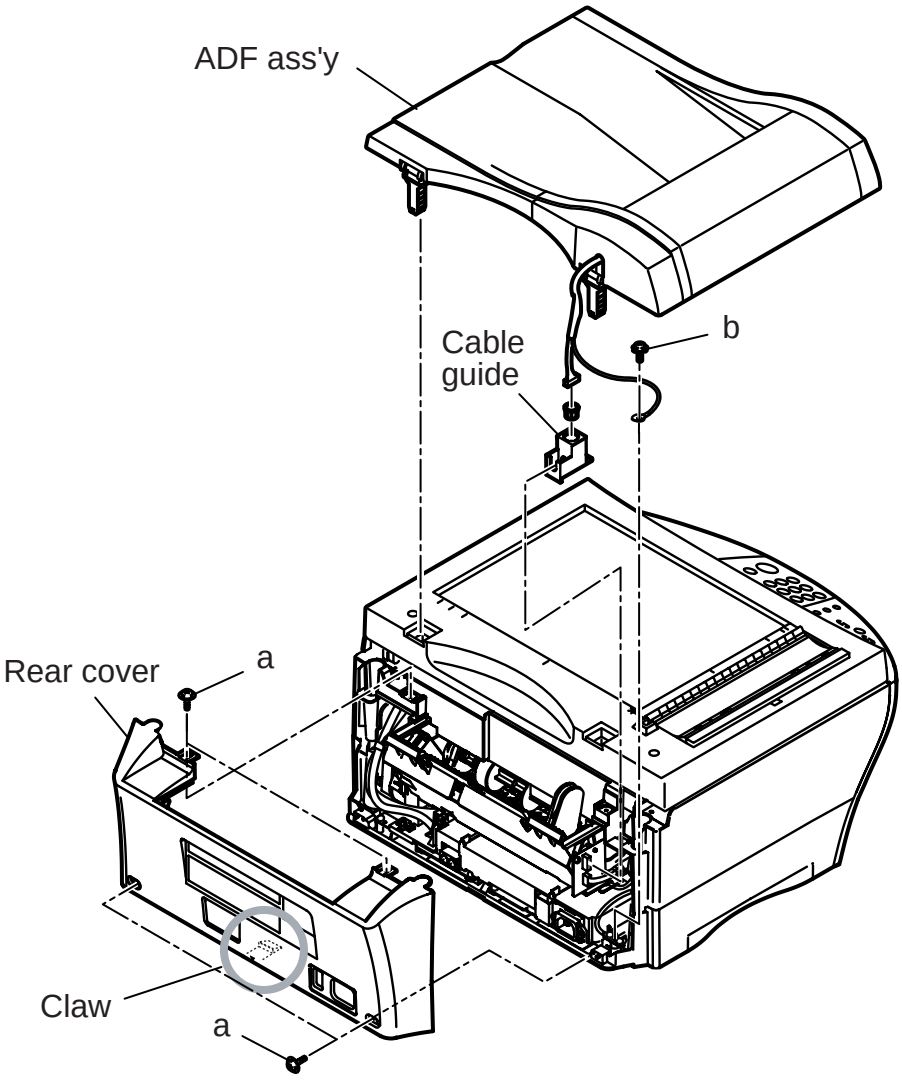



**Figure 3-15 Print and ASF ass'y 1**

To disassemble the MP700, perform steps (5) through (6).
(5) Remove the 4 screws (c); then while freeing the claw, detach the rear cover.
(6) Lift the pressure plate to remove.

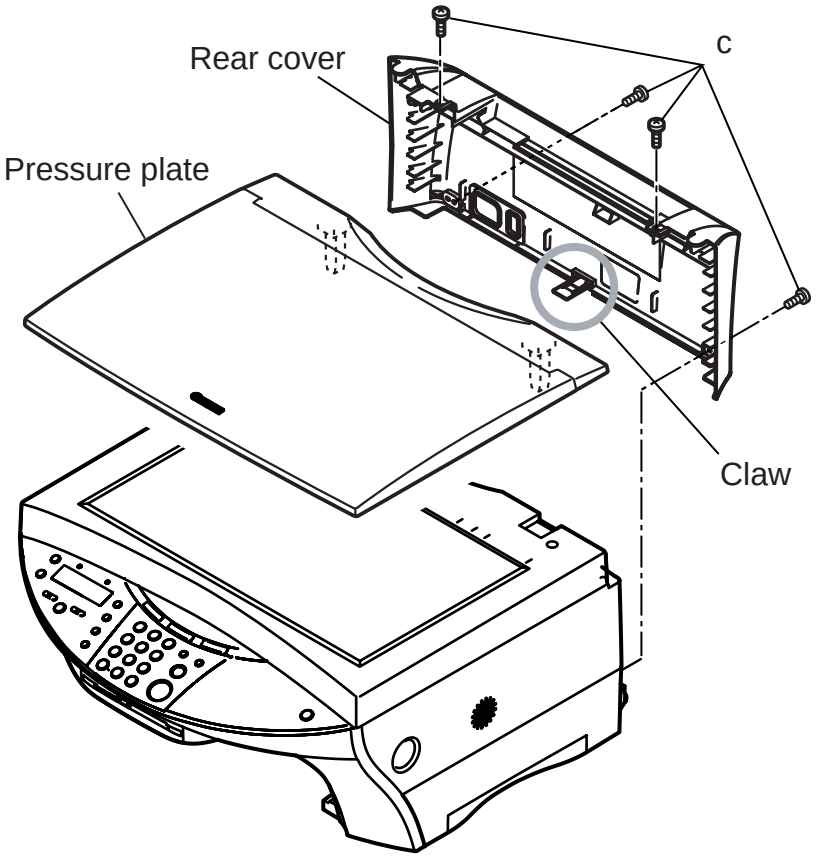



**Figure 3-16 Print and ASF ass'y 2**

(7) Remove the screw (d), and detach the grounding cable.
(8) Disconnect the connector JFBM3 of sensor board sub PCB.
(9) Push the button, and open the flatbed ass'y.
(10) Remove the 2 screws (e), and detach the SPCNT cover.
(11) Disconnect the connector JCS1 of the SPCNT board.
(12) Remove the joint shaft. Be sure to free the claw while doing so.
(13) Remove the torsion bars.
(14) Remove the flatbed ass'y.

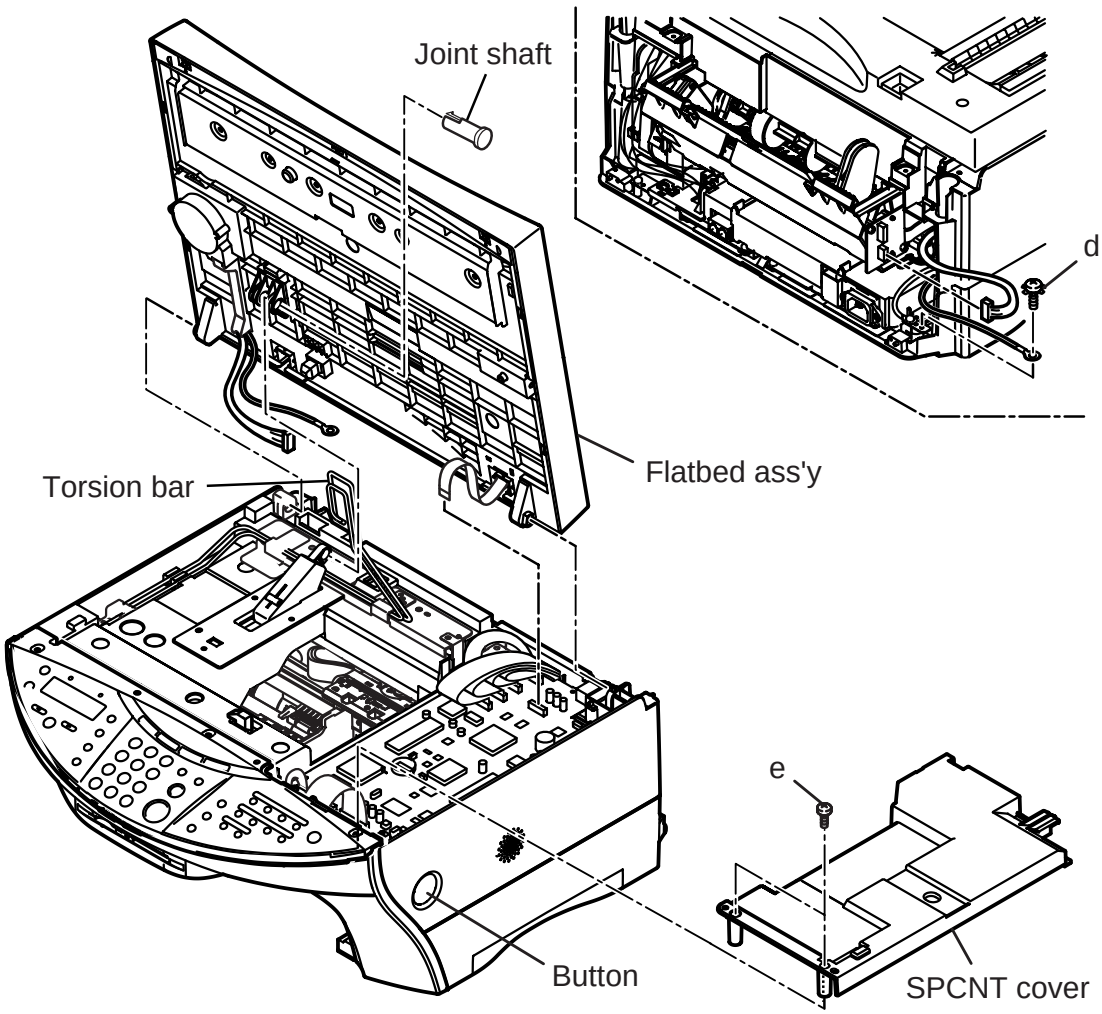



**Figure 3-17 Print and ASF ass'y 3**

(15) Disconnect the connectors JCARD1, JPANEL1, JNCU1, JNCU2, JSPK1, JPSU1, JEXT1, JEXT2, CN201, CN202, and CN203 of the SPCNT board. (The connector of the MP700 are JCARD1, JPANEL1, JPSU1, JEXT1, JEXT2, CN201, CN202, and CN203)

(16) Remove the 5 screws (f), and detach the SPCNT board.

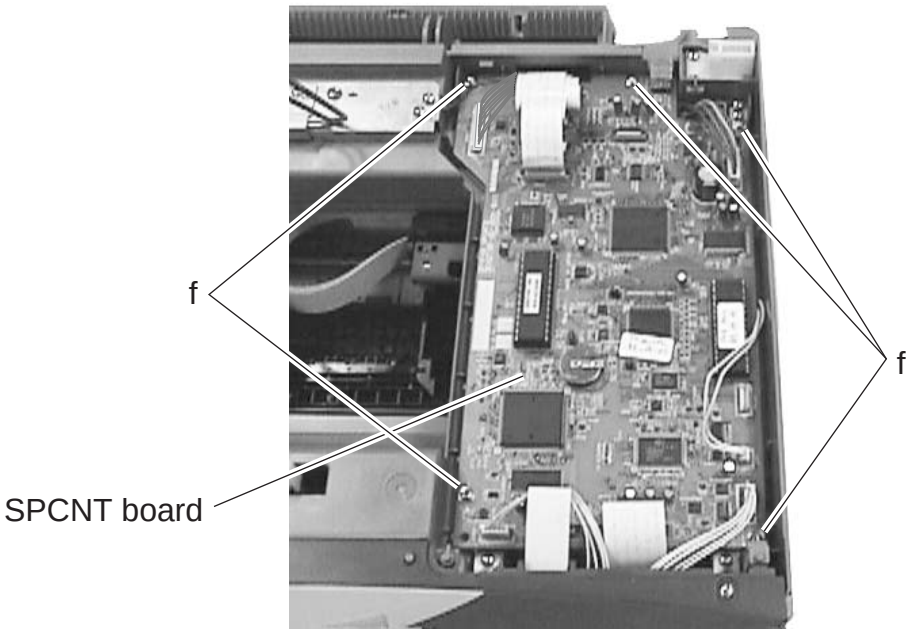



**Figure 3-18 Print and ASF ass'y 4**

(17) Remove the 2 screws (g), and detach the grounding cable.

(18) Remove the 3 screws (h), and detach the SPCNT shield plate.

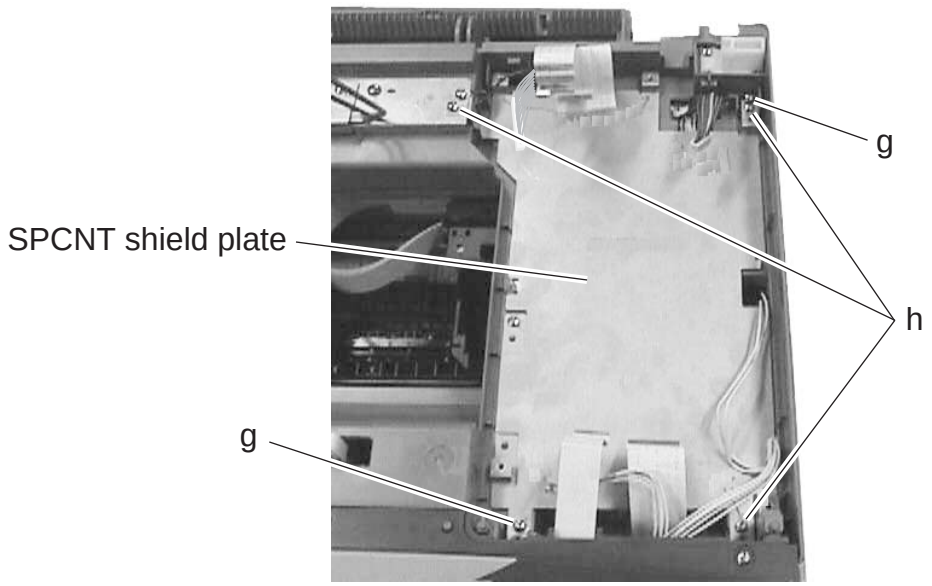



**Figure 3-19 Print and ASF ass'y 5**

(19) Working at the rear of the main unit, disconnect the relay connector of the cable connected to the connector J3 of the NCU board.
(20) Remove the 2 screws (i), and detach the grounding cable.
(21) Remove the 4 screws (j), and lift the middle frame unit slowly to detach.

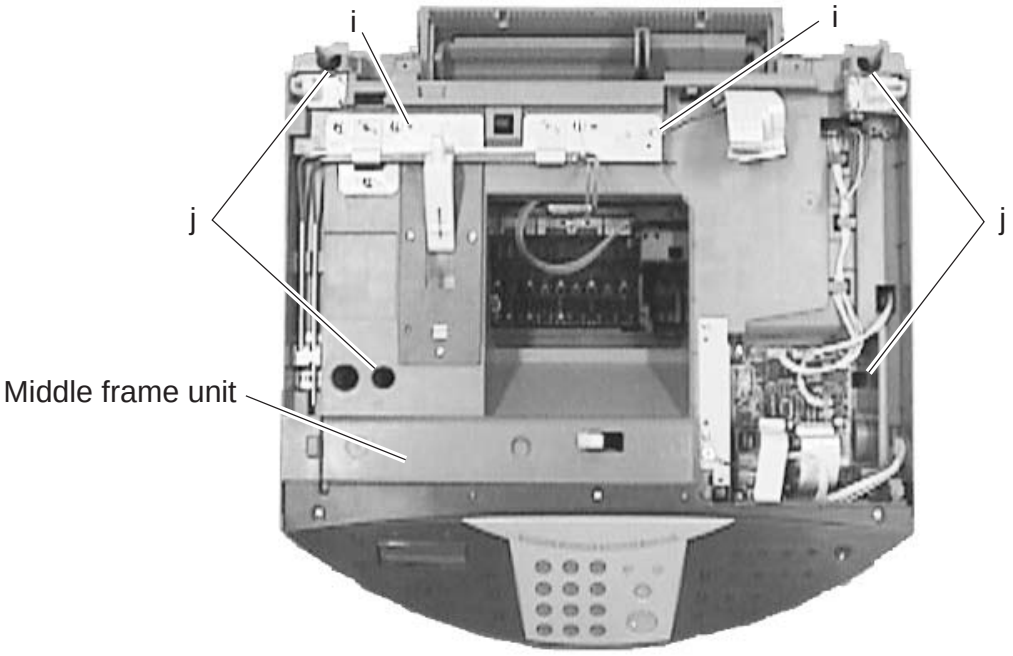



**Figure 3-20 Print and ASF ass'y 6**

(22) Remove the screw (k), and detach the grounding cable.
(23) Remove the 2 screws (l), and lift the print and ASF ass'y to detach.

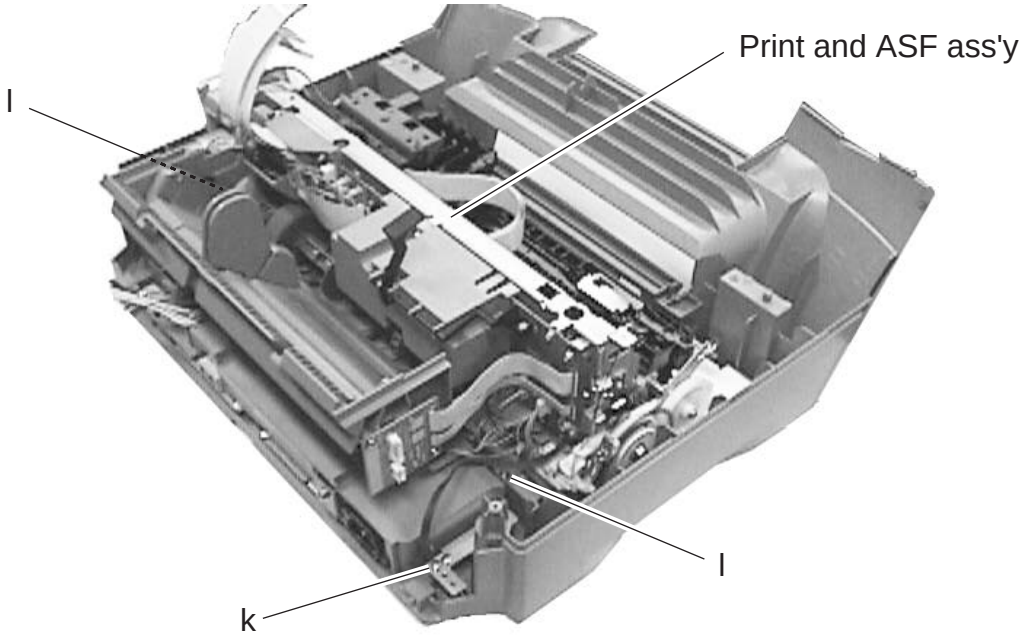



**Figure 3-21 Print and ASF ass'y 7**

### 2.1.5 Power supply unit

(1) Disassemble the print and ASF ass'y by performing steps (1) through (23); then, take out the print and ASF ass'y.
(2) Remove the 2 screws (m), and detach the power supply cover.
(3) Disconnect the connector JCN101 of the power supply unit.
(4) Remove the 4 screws (n), and detach the power supply unit.

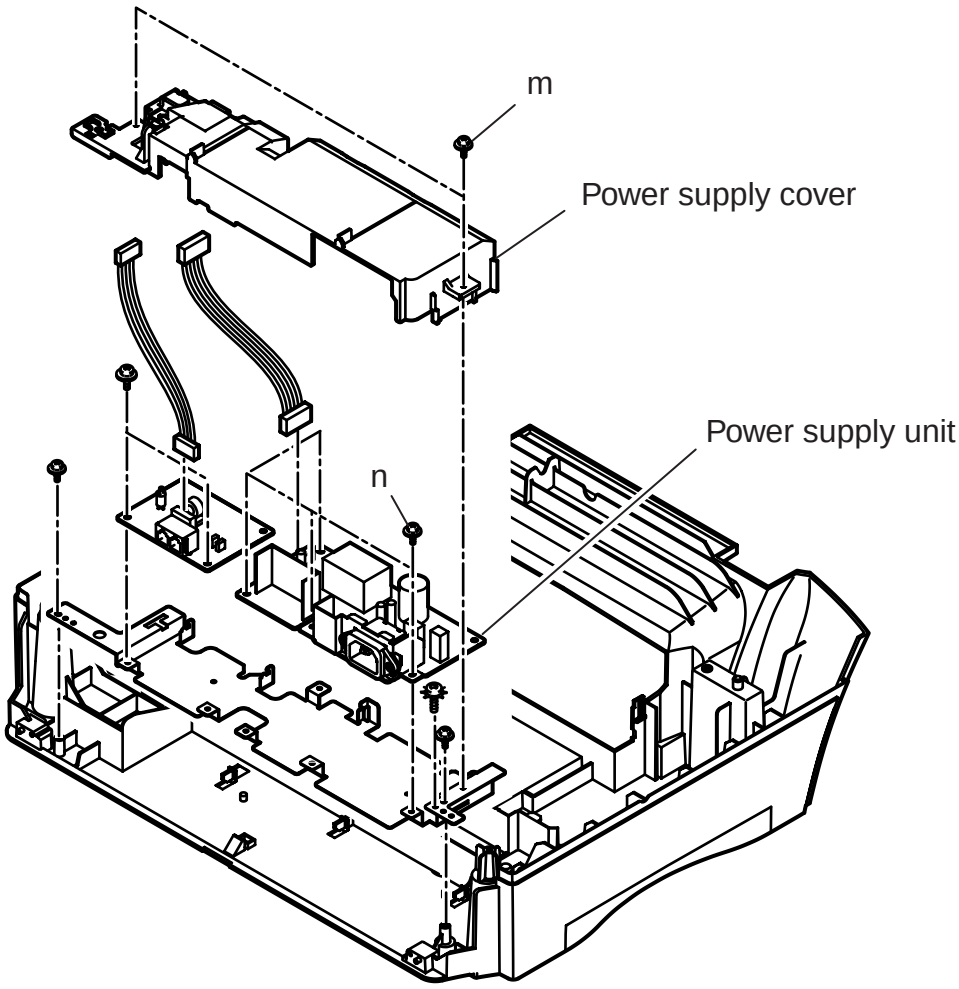



**Figure 3-22 Power supply unit**

## 2.1.6 Separation unit, Separation guide (for MP730 only)

(1) Remove the stop arm from the DF rear cover.
(2) Remove the screw (a), and detach the DF rear cover.
(3) Disconnect the connectors JFM1, JDS1, and JDES1 of the ADF board.
(4) Remove the screw (b), and detach the grounding cable.
(5) Remove the screw (c), and detach the ADF board.
(6) Lift the ADF ass'y to take it off from the main unit.

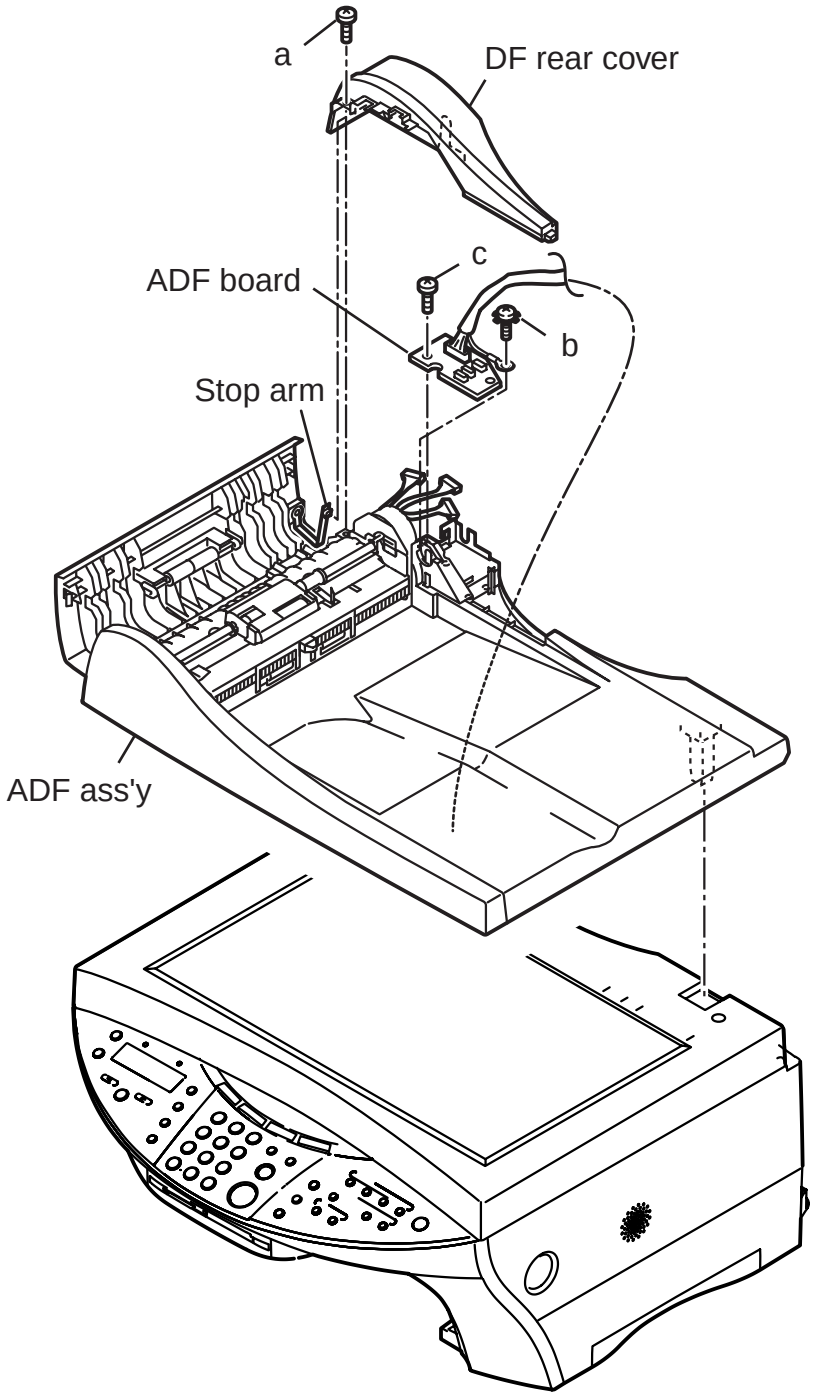



**Figure 3-23 Separation unit, Separation guide 1**

(7) Remove the screw (d).
(8) Free the 2 claws (e), and detach the DF front cover.

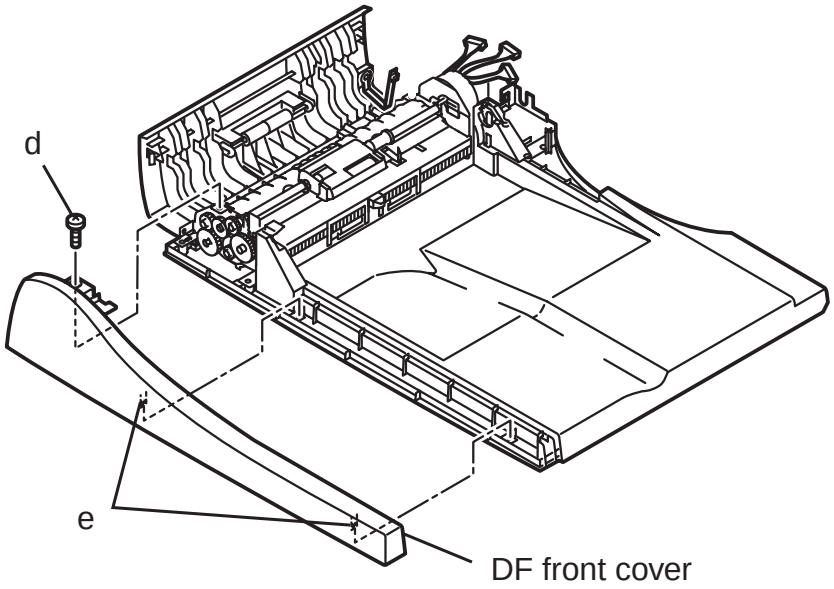



**Figure 3-24 Separation unit, Separation guide 2**

(9) Detach the 2 separation shaft guides from the shaft.
(10) Remove the E-ring.
(11) Remove the gear.
(12) Remove the 2 bushings.
(13) Remove the separation unit.
(14) Remove the 2 screws (f), and detach the document guide lower cover.
(15) Remove the 2 lever.
(16) Remove the spring.
(17) Remove the separation guide.

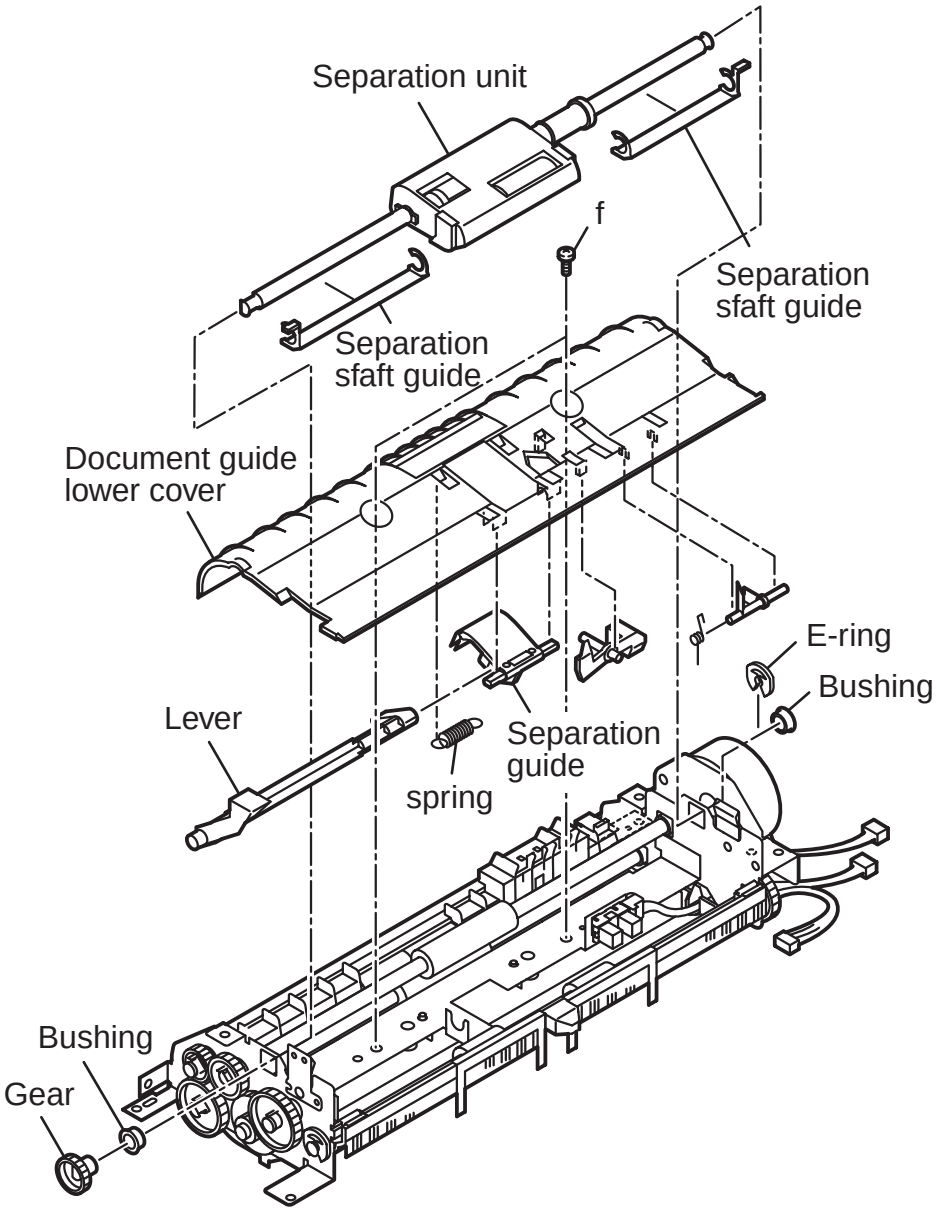



**Figure 3-25 Separation unit, Separation guide 3**

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# Chapter 4

# Maintenance and Service

# 1. MAINTENANCE LIST

## 1.1 Consumables

| Level | Consumable | When |
|---|---|---|
| User | INK tank (BCI-3eBK/BCI-3eC /BCI-3eM/BCI-3eY) | When ink in the ink tank being used has run out. |
| Service Technician | Printhead | When normal image is not printed out, though enough ink is remaining in the ink tank and head cleaning is repeated |

## 1.2 Cleaning

For the cleaning procedure, see *this Chapter 2. HOW TO CLEAN PARTS*.

| Level | Location | When |
|---|---|---|
| User | Main unit outer covers | When dirty. |
| | Pickup/Separation roller | When document pickup/separation performance deteriorates. |
| | Document U-Turn/ feed/eject roller | When document feed/eject performance deteriorates. |
| | Separation guide | When document separation performance deteriorates. |
| | Document guide sheet | When black vertical stripes appear in copied or transmitted images. |
| | Document glass | When dirty. |
| | Printer platen | When ink adheres to the platen. |
| Service Technician | White sheet | When the color or brightness of the copied or transmitted image is not normal. |

## 1.3 Periodic Inspection

None

## 1.4 Periodic Replacement Parts

None

## 1.5 Adjustment Items

The following adjustments must be made on this fax.
For the adjustment procedure, see *this Chapter 3. ADJUSTMENT.*

| Item | When |
|---|---|
| CS LED lights-on duration | When the SPCNT board, or the lithium battery, or the contact adjustment sensor are replaced. Also, when the color or brightness of the copy image or transmission image is not normal. |
| Printhead position adjustment | When the vertical lines shift during Bi-directional printing. |

**NOTE**

**Automatic adjustment of CS LED lights-on duration**

The CS LED lights-on duration, which can be adjusted via key operation, is also adjusted automatically in the following cases:

**When power is turned ON then SRAM data is corrupted**

When this product is shipped, after factory adjustment of the CS LED light-on duration, the exposure control data is stored in SRAM. Because this data is preserved by the Lithium battery even if the power supply is shut off, further adjustment is unnecessary in almost all cases. When the machine's power switch is turned on, the data stored in SRAM is checked for correctness by Checksum, and if any data in SRAM has been lost, adjustment of CS-LED lights-on duration is automatically performed at that time.

## 1.6 General Tools

| Tool | Use |
|---|---|
| Phillips screwdriver | Removing/inserting screws |
| Flat bladed screwdriver | Removing/inserting screws |
| Precision Phillips screwdriver | Removing/inserting screws |
| Precision flat bladed screwdriver | Removing plastic tabs |
| Tweezers | Removing coil spring |
| Isopropyl alcohol (IPA) | Cleaning the cleaning location |
| Pliers, needle nose | Driving retaining ring |

## 1.7 Special Tools

| Tool | Use | Part No. |
|---|---|---|
| Grease (FLOIL G311S) | Apply to specified parts | TKC-0953 |
| Grease (FLOIL KG-107A) | Apply to specified parts | QY9-0057 |
| Grease (MOLYKOTE PG-641) | Apply to specified parts | CK-0562 |
| Grease (MOLYKOTE EMD-110) | Apply to specified parts | HY9-0023 |

# 2. HOW TO CLEAN PARTS

## 2.1 Main Unit Outer Covers

Wipe with a dry, soft cloth.

## 2.2 Pickup/Separation Roller (MP730 only)

Open the ADF cover, and wipe with a dry, soft cloth.

## 2.3 Document U-Turn/Feed/Eject Roller (MP730 only)

Open the ADF cover, and wipe with a dry, soft cloth.

## 2.4 Separation Guide (MP730 only)

Open the ADF cover, and wipe with a dry, soft cloth.

## 2.5 Document Guide Sheet (MP730 only)

Open the ADF ass'y, and wipe with a dry soft cloth.

## 2.6 Document Glass

Open the pressure plate or ADF ass'y, and wipe with a dry soft cloth.

## 2.7 White Sheet Area

Detach the document glass from the machine, and wipe the rear side (white sheet attached area) of the document glass with a dry, soft sloth.

## 2.8 Printer Platen

Open the flatbed ass'y, and wipe with a cloth moistened with a little water.

**NOTE**

If the parts above are very dirty, wipe with a cloth moistened with IPA (isopropyl alcohol).

Do not use tissue paper. Dust from the tissue paper causes static electricity.

Precautions when Using IPA
When cleaning with IPA, take care to prevent the IPA from splashing high-temperature parts. If IPA splashes high-temperature parts, leave for at least three minutes to allow the IPA to evaporate.

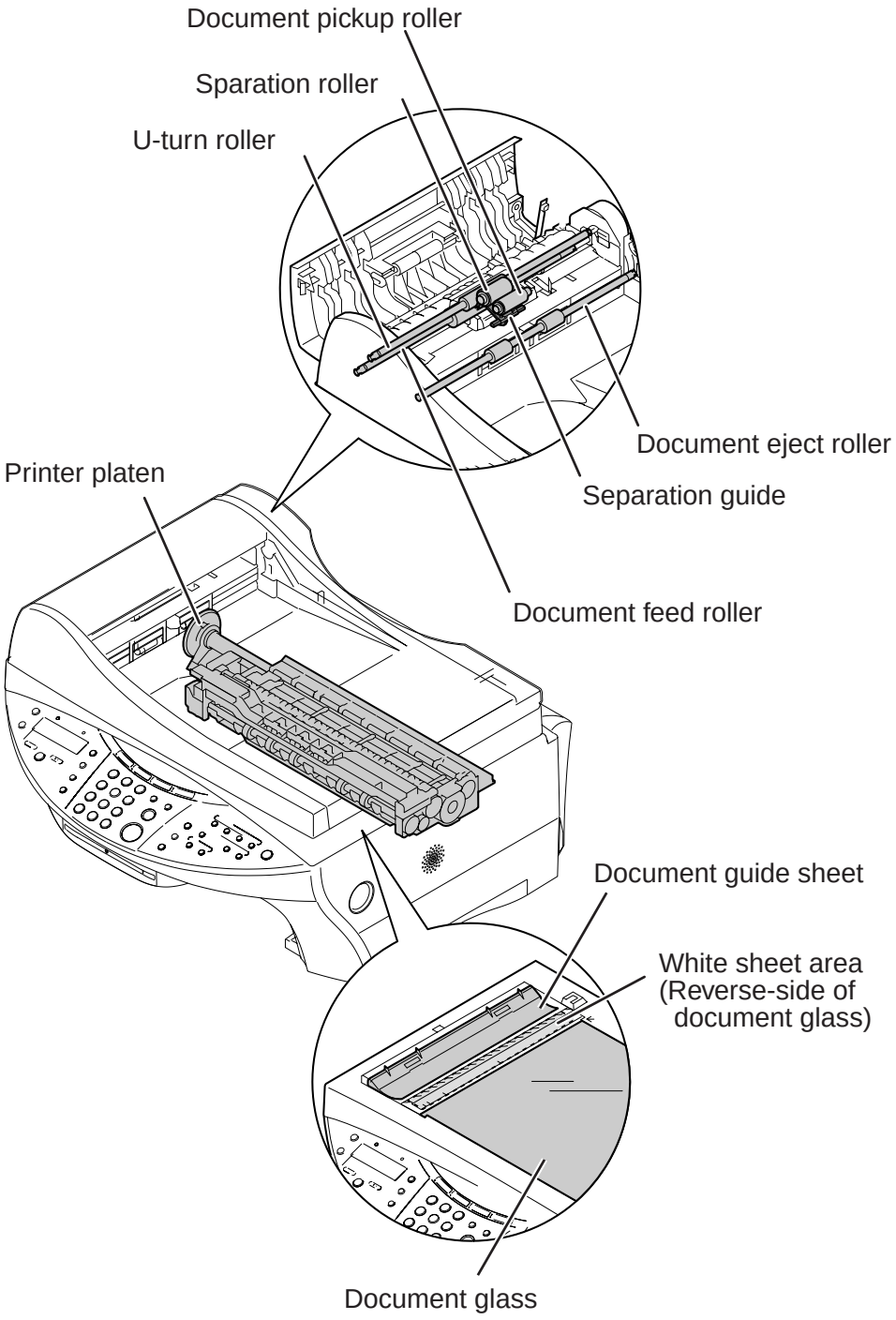



**Figure 4-1 Cleaning Location**

# 3. ADJUSTMENT

## 3.1 CS LED Lights-on Duration Adjustment

### a) Overview

This adjustment is used to eliminate uneven scanning which can result from variations in light intensity between individual LED's. Performing the adjustment will therefore have an effect on scanned and copied images.

The adjustment value is registered in an SRAM IC which has lithium battery back-up and will not be lost even if power is turned off. However, the SRAM data can become damaged, for example by battery depletion. In this case, the machine checks the data's validity the next time power is turned ON. If the data is invalid, the adjustment is made automatically. Because the user is automatically prompted, it is almost never necessary to perform this adjustment during normal use. However, if the SPCNT board, Contact sensory ass'y, or lithium battery is replaced, be sure to perform this adjustment. Also, if the color or brightness of scanned or copied images is faulty, performing this adjustment may correct the problem.

### b) Procedure

(1) Check that the ADF or pressure plate is closed correctly, then perform the adjustment by following the steps described below.

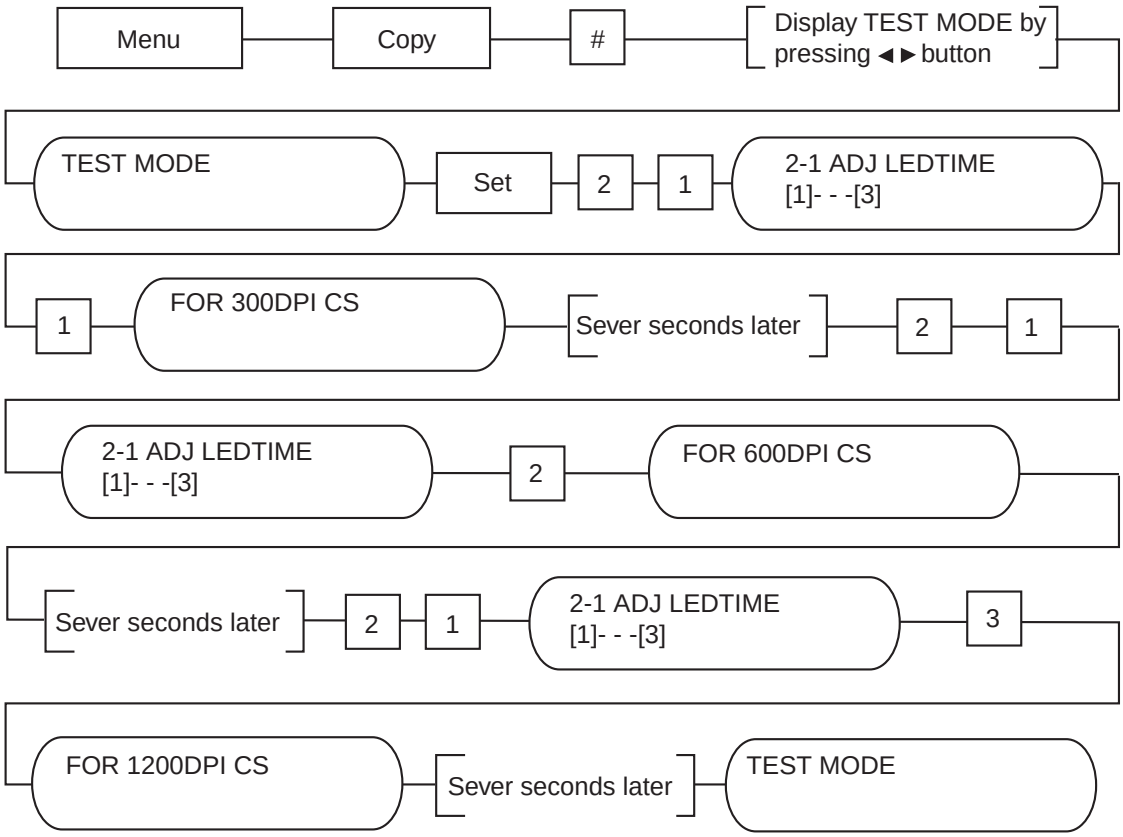



**Figure 4-2 CS LED Lights-on Duration Adjustment Operation**

(2) The adjustment procedure is finished when the display reads **TEST MODE**. To leave the test mode, press the **Stop/Reset** key, and then **ON/OFF** key.

## 3.2 When Adjustment of the Print Head Position is Required

### a) Overview

When replacing the print heads, the point of ink ejection may be off, preventing clean characters, depending on the state in which printhead is installed. In order to eliminate this drift, it is necessary to adjust the head position after attaching the printhead. Set 2 or more sheets of normal paper sized A4 or LTR on the Auto Sheet Feeder, and perform head position adjustment following the steps in Fig. 4-5.

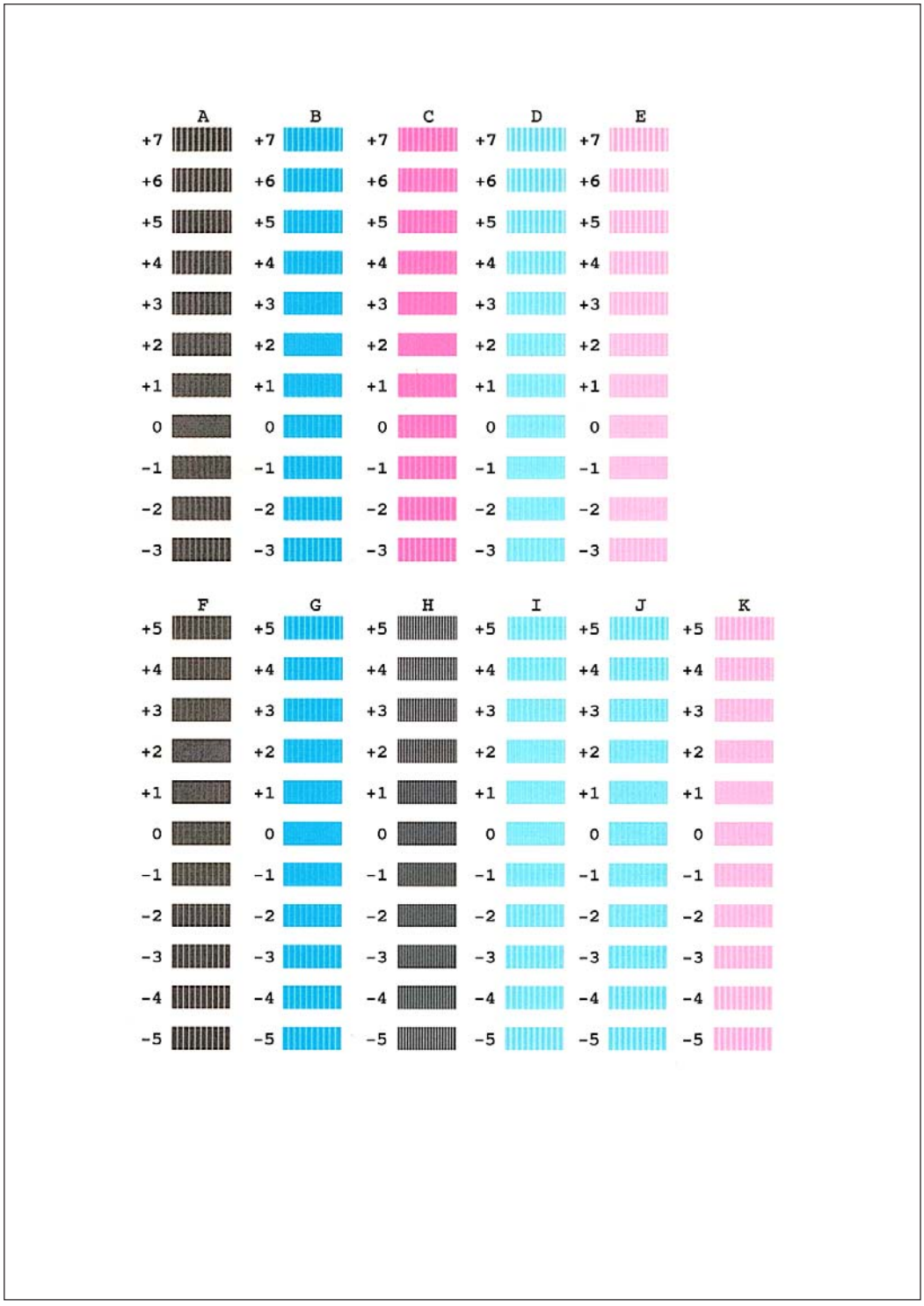



**Figure 4-3 Print Position Adjustment Pattern**

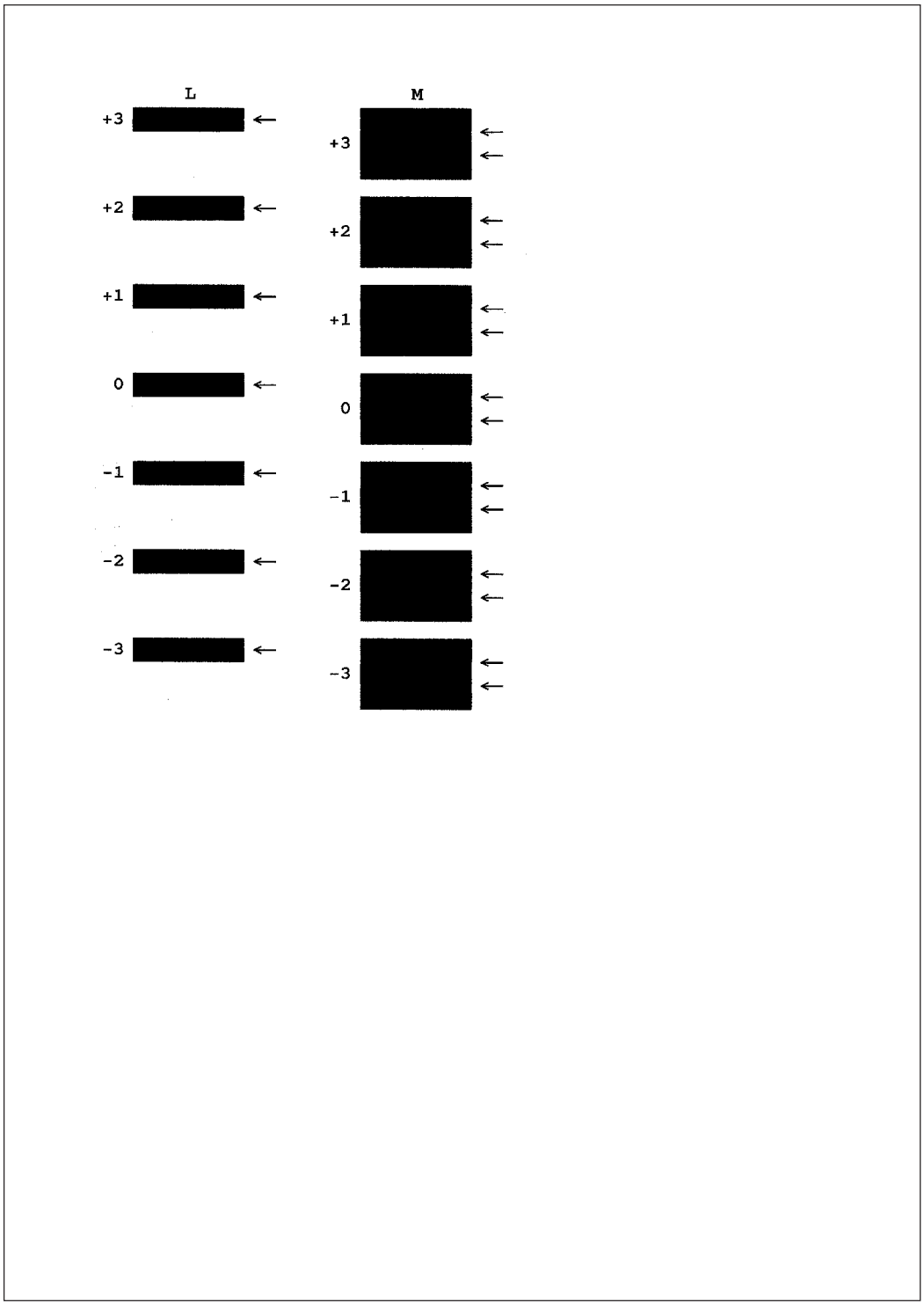



**Figure 4-4 Print Strip Adjustment Pattern**

NOTE

Be sure to set A4 or LTR-sized paper in the ASF before printing the head position adjustment pattern. Using printing paper smaller than the printing area of the data when performing the head position adjustment print will contaminate the platen with ink.

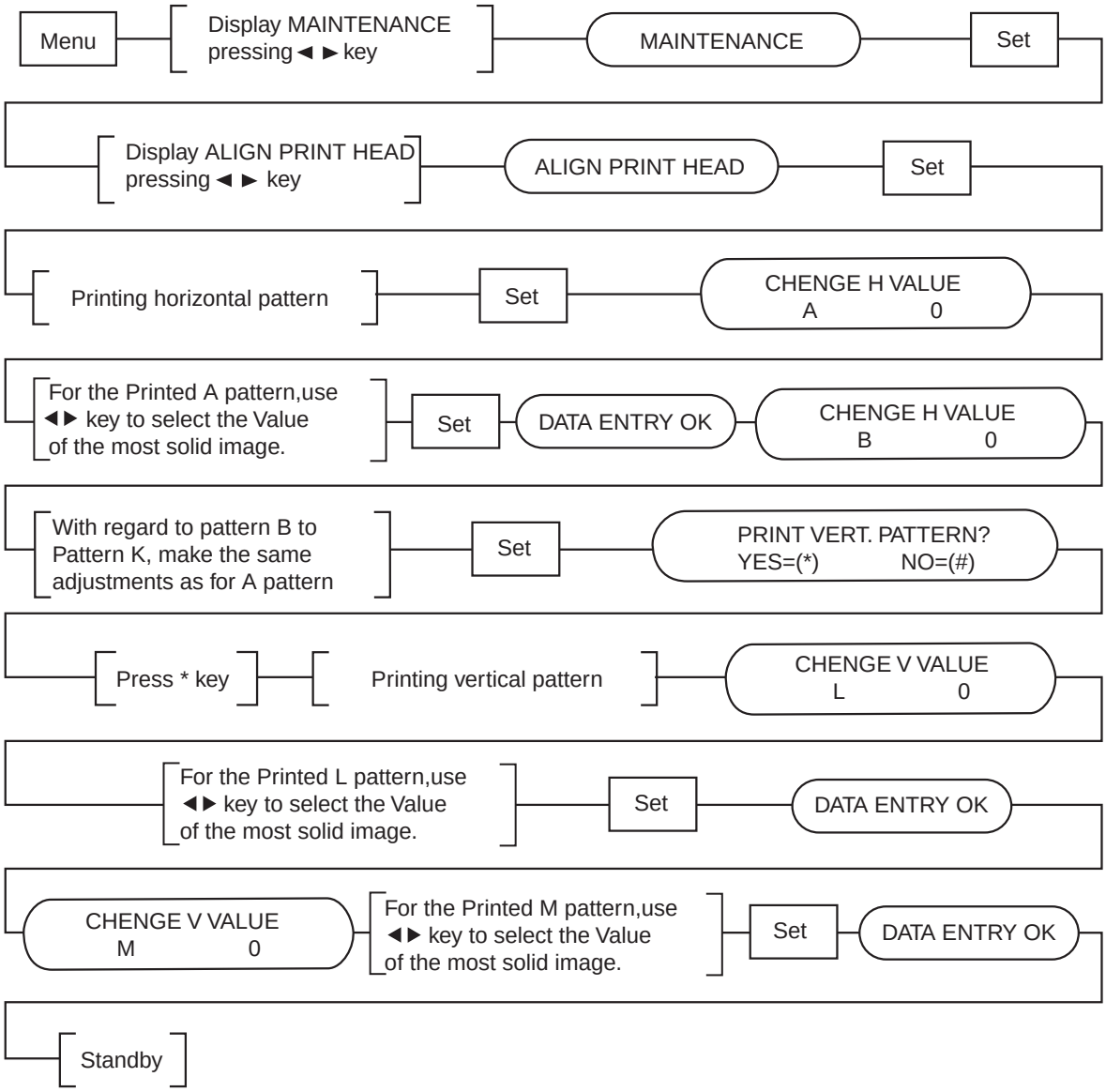

Menu
Display MAINTENANCE pressing ◄ ► key
MAINTENANCE
Set
Display ALIGN PRINT HEAD pressing ◄ ► key
ALIGN PRINT HEAD
Set
Printing horizontal pattern
Set
CHENGE H VALUE
A 0
For the Printed A pattern,use ◄► key to select the Value of the most solid image.
Set
DATA ENTRY OK
CHENGE H VALUE
B 0
With regard to pattern B to Pattern K, make the same adjustments as for A pattern
Set
PRINT VERT. PATTERN?
YES=(*) NO=(#)
Press * key
Printing vertical pattern
CHENGE V VALUE
L 0
For the Printed L pattern,use ◄► key to select the Value of the most solid image.
Set
DATA ENTRY OK
CHENGE V VALUE
M 0
For the Printed M pattern,use ◄► key to select the Value of the most solid image.
Set
DATA ENTRY OK
Standby

**Figure 4-5 Vertical Line Misalignment Correction Procedure**

# 4. TROUBLESHOOTING

## 4.1 Troubleshooting Index

For troubleshooting, use the troubleshooting index below to investigate the cause of the problem and refer to the specified page for countermeasures.

**Problem**

**Errors shown on the display (Evaluation criteria: Look at the unit in question.)**

The error message can be checked. *Page 4-12.*
The error code can be checked. *Page 4-18.*

**General errors** *Page 4-26.*

The unit does not power on.
The display looks abnormal.
The keys do not work.
No sound from the speaker

**Printing problem (Evaluation criteria: Test printing is no good.)**

The paper is not fed properly. *Page 4-27*
The paper feed motor does not run.
The paper is not picked up from the auto sheet feeder.
The printing operation is abnormal. *Page 4-27*
Nothing is printed.
The carriage motor does not run.
Printing quality error *Page 4-28*
The printer does not at all.
Printing stop midway.
Certain colors are not printed.
Blotches appear.
Blank ink appear.

**Scanning problem (Evaluation criteria: Test printing is good, but the copied image is no good.)**

The document is not fed. *Page 4-29*
The document feed motor does not run.
The document slips against the rollers.
The document does not separate.
Faulty scanner unit's sensors
The scanning image is abnormal. *Page 4-30*
Nothing is printed.
The image has vertical stripes.
The half-tone image contains black dots.
The color or brightness of the scanned image is not normal.

**Memory card problem**
Memory card error *Page 4-30*

**Test mode function problems.** *Page 4-31.*
Faulty operation panel test.
Faulty contact sensor test.
Faulty D-RAM test.
Faulty Sensor test.

**Processing communication problems.** *Page 4-32.*
Initial identification of problems.
Procedures for processing communication problems.

## 4.2 Errors Shown on the Display

### 4.2.1 User error message

Look for the applicable error message and execute the appropriate countermeasures.

#### "Bk INK EMPTY"

**Cause:** The Black ink tank in the printhead is empty.
**Solution:** Replace the Black ink tank.

#### "BUSY/NO SIGNAL" (#005/#018)

**Cause:** The receiving fax did not answer within 55 seconds. (T1 timer over)
**Solution:** Contact the other party and have them check their fax.You can try to send the document manually. For an overseas call, add pauses to the registered number.
**Cause:** The touch tone/rotary pulse setting on your fax is incorrect.
**Solution:** Set your fax to the setting that matches your telephone line.
**Cause:** The other party is not using a G3 machine.
**Solution:** Contact the other party and have them send or receive the document using a G3 machine.
**Cause:** The other party's fax is not working.
**Solution:** Contact the other party and have them check their fax.
**Cause:** The telephone number you dialed is busy.
**Solution:** Try sending the document at a later time.

#### "C INK EMPTY"

**Cause:** The Cyan ink tank in the printhead is empty.
**Solution:** Replace the Cyan ink tank.

## "CARTRIDGE JAMMED"

**Printing position correction failed**

**Cause:** Carriage movement prevented by one of the following.
Damaged shaft.
Parts deformed. (Carriage or guide frame)
Insufficient grease.

**Solution:** Replace the shaft.
Replace the deformed parts.
Apply more grease.

**Cause:** Bi-directional print displacement correction failed because the carriage motor is out of step, or some similar reason.

**Solution:** Replace the carriage motor.

**Home position error**

**Cause:** Foreign body in carriage section.

**Solution:** Open flatbed ass'y, and remove foreign body.

**Cause:** Loose carriage belt.

**Solution:** Replace carriage belt.

**Cause:** Guide frame home position detection tabs is damaged or bent parts.

**Solution:** Replace the damaged or bent parts.

**Cause:** Carriage motor does not work.

**Solution:** (1) Switch power OFF/ON.
(2) Replace carriage motor.

**Cause:** The position of the carriage cannot be detected (due to smears on the carriage encoder film or SPCNT board failure).

**Solution:** (1) Switch power off/on.
(2) Wipe the carriage encoder film with a cloth soaked with alcohol.
(3) Replace the carriage encoder film.
(4) Replace the SPCNT board.

NOTE

This error message means the same as service error codes ##338 and ##340. When this error occurs in this model, it is not treated as a service error, but as a user error, and the error message is displayed.

## "CHECK PAPER SIZE"

**Cause:** The size of the paper loaded in the paper cassette is different from the paper size set by user data.

**Solution:** Select a correct paper size by pressing **Paper select** key.

### "CHECK PRINTER" (##332~##348, ##352, ##354, and ##355)

**Cause:** The printer's internal unit has malfunctioned.

**Solutions:** (1) Remove the jammed paper. (Check the paper edge sensor is OFF.)
(2) Press **Resume** key.
(3) Reinstall the printhead.
(4) Turn the power off and on.
(5) Set the service data #1 SSSW SW01 bit 0 to "1" and check the service code. Refer to the countermeasures for that error code.

### "CLEAR PAPER JAM" (#009)

**Cause:** Paper jam.

**Solution:** Clear the paper jam and press the **Resume** key.

### "COVER OPEN"

**Cause:** You opened the flatbed ass'y during an operation.

**Solution:** Close the flatbed ass'y.

**Cause:** Faulty cover sensor

**Solution:** Replace the cover sensor(a unit of replacement is the sensor board: MP730 HM1-0464, MP700 HM1-0465)

### "DOC. TOO LONG" (#003)

**Cause:** The document is longer than 39.4"(1m).

**Solution:** Use a copy machine to make a reduced copy of the document. Then send again.

**Cause:** It took more than 32 minutes to send or copy a document. It took more than 32 minutes to receive a document.

**Solution:** Divide the document and send or copy each part separately. Contact the other party. Have them divide the document and send each part separately.

### "LOAD PAPER" (#009)

**Cause:** The fax is out of paper.

**Solution:** Add more paper to the auto sheet feeder. Make sure the stack is below the limit mark and press the **Start** or **Resume** key.

### "M INK EMPTY"

**Cause:** The Mazenta ink tank in the printhead is empty.

**Solution:** Replace the Mazenta ink tank.

### "MEMORY FULL" (#037)

**Cause:** The fax's memory is full because it has received too many documents.

**Solutions:** (1) Print out any documents which are stored in memory. Then start the operation again.
(2) If the memory contains any facsimiles you don't need, delete them.
(3) You cannot receive a fax was scanned with fine graphic images.

**Cause:** The fax's memory is full because you tried to send too many pages at once.

**Solution:** Divide the document and send each part separately.

### "NO RX PAPER" (#012)

**Cause:** The receiving fax machine declares no paper in DIS, or its memory is full.

**Solution:** Contact the other party, and ask them to put paper in their machine, or to clear their fax machine's memory.

### "NO TEL #" (#022)

**Cause:** The key you pressed has no number registered for One-Touch Speed Dialing, Coded Speed Dialing, or Group Dialing.

**Solution:** Print a list of registered numbers and make any corrections needed, then try again.

### "NOT AVAILABLE" (#025)

**Cause:** One-touch or coded speed dial already registered.

**Solution:** Check the contents of the one-touch or coded speed dialling registration, then try again.

### "PROBLEM READING CARD" TURN OFF AND ON

**Cause:** There is a problem with the card slot.

**Solution:** (1) Switch power OFF/ON.
(2) Replace the multi card reader board.
(3) Replace the SPCNT board.

### "PUT IN CARTRIDGE"

**Cause:** The printhead is not set.

**Solution:** Set the printhead.

**Cause:** The printhead is set incorrectly.

**Solution:** Set the printhead correctly.

### "TRY AGAIN IN B/W" (#085)

**Cause:** You tried faxing a color document to a machine that does not support color faxing.

**Solution:** (1) Change the setting of MENU> MAINTENANCE> TX SETTINGS> COLOR DIRECT TX to ON.
(2) Try sending again in black & white.
(3) Check the received fax machine’s setting for color faxing is available.

### "WAIT COOLING"

**Cause:** The printhead is hot.

**Solution:** Wait until the message disappears.

### "WRONG CARTRIDGE"

**Cause:** The printhead isn't installed correctly.

**Solution:** (1) Reinstall the printhead.
(2) Replace the printhead.

### "Y INK EMPTY"

**Cause:** The Yellow ink tank in the printhead is empty.

**Solution:** Replace the Yellow ink tank.

## 4.2.2 Error codes

### a) Service error code output

When service data #1 SSSW SW01 bit 0 is set to "1", then service error codes are printed on the activity management reports, reception result reports and error transmission reports, when communication ends in an error. Also, the following is displayed, when an error occurs.

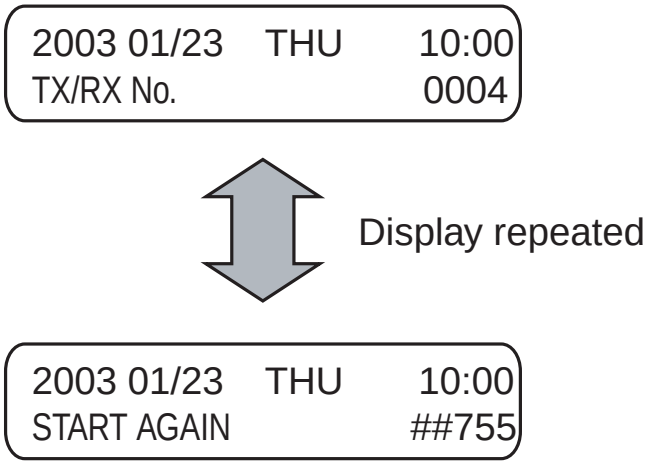



**Figure 4-6 Service Error Code Display**

### b) Error code countermeasures

The following item c) lists all the error codes that the product can display. As for the causes and countermeasures, only the error codes which are newly incorporated in the unit a remedies unique to the product are included in the item d). For the causes and countermeasures of other error codes, refer to the separate *G3/G4 Facsimile Error Code List (Rev. 2)*.

- **Increase the transmission level**

  Set service data #2 MENU Parameter No.07 to -8(dBm).
- **Decrease the transmission level**

  Set service data #2 MENU Parameter No.07 to -15 (dBm).
- **Echo measures**

  Change the following bit switches of service data #1 SSSW SW03.

  Bit 4:1 Ignore the first DIS signal sent by the other fax machine.

  0 Do not ignore the first DIS signal sent by the other fax machine.

  Bit 5:1 Transmit a tonal signal (1850 or 1650 Hz) when the other fax machine sends a DIS signal.

  0 Do not transmit a tonal signal when the other fax machine sends a DIS signal.

  Bit 6:1 Transmit a 1650-Hz tonal signal when bit 5 is 1.

  0 Transmit a 1850-Hz tonal signal when bit 5 is 1.

  Bit 7:1 Transmit a tonal signal before sending a CED signal.

  0 Do not transmit a tonal signal before sending a CED signal.

- **EPT (Echo Protect Tone)**

  Change service data #1 SSSW SW03 bit 1.

  Bit 1:1 Transmit an echo protect tone.

  0 Not transmit an echo protect tone.

- **Adjust NL equalizer.**

  Set service data #2 MENU Parameter No.05 to "ON".

- **Reduce the transmission start speed.**

  Reduce the transmission speed by changing user data "MAINTENANCE" "FAX SETTINGS" "TX SETTINGS" "TX START SPEED".

- **Loosen the TCF judgment standard.**

  Not available for this fax.

- **Loosen the RTN transmission conditions.**

  Change service data #3 NUMERIC Param. Parameter No.02 to 04.

  No.02 Percentage of errors in all lines : Set close to 99%.

  No.03 Number of lines of burst condition : Set close to 99 lines.

  No.04 Lines below the burst condition : Set close to 99 times.

- **Increase the no-sound time after CFR reception.**

  Change service data #1 SSSW SW04 bit 4 to "1".

  Bit 4:1 Time when the low-speed signal is ignored after sending a CFR signal: 1500 ms

  0 Time when the low-speed signal is ignored after sending a CFR signal: 700 ms

### c) ERROR CODE LIST

The error codes that have newly been added starting with the product are identified by the notation "*new*" those error codes for which remedies unique to the product are offered are identified by the notation "UNQ (UNIQUE)."

#### c-1) User error code

| | No. | Tx or Rx | Definition |
|---|---|---|---|
| | #001 | [TX] | Document has jammed |
| | #003 | [TX/RX] | Document is too long, or page time-over |
| | #005 | [TX/RX] | Initial identification (T0/T1) time-over |
| | #006 | [TX] | Transmission cannot be made |
| | | [RX] | Phase synchronization fails in OLD-FM |
| | #008 | [TX] | Password does not match for polling transmission |
| | #009 | [RX] | Recording paper has jammed or the recording paper has run out |
| | #011 | [RX] | Polling reception error |
| | #012 | [TX] | The other party has run out of recording paper |
| | #018 | [TX/RX] | Auto dialing transmission error |
| | #021 | [RX] | The other party has rejected the machine during polling reception |
| | #022 | [TX] | Call fails |
| | #037 | [RX] | Memory has overflowed when receiving images |
| | #052 | [RX] | Image memory full by no ink error |
| UNQ | #085 | [TX] | Other party does not support ITU-T Color Faxing |
| | #995 | [TX/RX] | Memory Communication reservation cancellation |

#### c-2) Service error code

| No. | Tx or Rx | Definition |
|---|---|---|
| ##100 | [TX] | The number allowed for retransmission of the procedure signal was exceeded during transmission |
| ##101 | [TX/RX] | The modem speed of the machine does not match that of the other party |
| ##102 | [TX] | Fallback is not possible |
| ##103 | [RX] | EOL cannot be detected for 5 sec (15 sec if CBT) |
| ##104 | [TX] | RTN or PIN has been received |
| ##106 | [RX] | The procedure singal cannot be received for 6 sec while in wait |
| ##107 | [RX] | The transmitting machine cannot be use fallback |
| ##109 | [TX] | After transmitting DCS, a signal other than DIS, DTC, FTT, CFR, and CRP was received, exceeding the permitted number of transmissions of the procedure signal |
| ##111 | [TX/RX] | Memory error |
| ##114 | [RX] | RTN was transmitted |
| ##200 | [RX] | During image reception, a carrier is not detected for 5 sec |
| ##201 | [TX/RX] | DCN was received through a non-normal procedure |
| ##204 | [TX] | Receive DTC without Tx data |
| ##220 | [TX/RX] | System error (e.g., main program may have gone away) |
| ##224 | [TX/RX] | Fault occurred in the communication procedure signal |

| | No. | Tx or Rx | Definition |
|---|---|---|---|
| | ##226 | [RX] | Stack Pointer Not within RAM Range |
| | ##229 | [RX] | The recording system became locked for 1 min |
| | ##237 | [RX] | The IC used to control the decoder malfunctioned |
| | ##238 | [RX] | The unit used to control recording malfunctioned |
| | ##261 | [TX/RX] | System error occurred between the modem and system control board |
| | ##280 | [TX] | The number of re-transmissions of the procedure signal has been exceeded |
| | ##281 | [TX] | The number of re-transmissions of the procedure signal has been exceeded |
| | ##282 | [TX] | The number of re-transmissions of the procedure signal has been exceeded |
| | ##283 | [TX] | The number of re-transmissions of the procedure signal has been exceeded |
| | ##284 | [TX] | DCN has been received after transmission of TCF |
| | ##285 | [TX] | DCN has been received after transmitting EOP |
| | ##286 | [TX] | DCN has been received after transmitting EOM |
| | ##287 | [TX] | DCN has been received after transmitting MPS |
| | ##288 | [TX] | After transmitting EOP, a signal other than PIN, PIP, MCF, RTP, or RTN was received |
| | ##289 | [TX] | After transmitting EOM, a signal other than PIN,PIP,MCF, RTP, or RTN was received |
| | ##290 | [TX] | After transmitting MPS, a signal other than PIN,PIP,MCF, RTP, or RTN was received |
| | ##332 | [TX/RX] | Printer control DRAM check error |
| | ##333 | [TX/RX] | Printer control ROM check error |
| | ##334 | [TX/RX] | Printer control EEPROM check error |
| | ##335 | [TX/RX] | Data transmission error between the system control section and printer control section |
| | ##336 | [TX/RX] | BJ head abnormal temperature error |
| | ##337 | [RX] | BJ head temperature sensor error |
| | ##338 | [RX] | Printing Position Correction Failed |
| | ##339 | [RX] | BJ Head Voltage Malfunction Error |
| | ##340 | [TX/RX] | Home Position Error |
| *UNQ* | ##341 | [TX/RX] | Maintenance Jet Waste Ink Tank Full |
| *UNQ* | ##342 | [TX/RX] | Cleaning absorption waste ink capacity full |
| *UNQ* | ##343 | [TX/RX] | Ink Detection Waste Ink Tank Full |
| | ##345 | [TX/RX] | BJ cartridge head cleaning error |
| | ##346 | [TX/RX] | Inside temperature error |
| | ##348 | [TX/RX] | Ink detection sensor error |
| *New* | ##352 | [RX] | Printer control EEPROM head information error |
| *New* | ##354 | [TX/RX] | Mechanical malfunction of BJ printer |

| No. | Tx or Rx | Definition |
|---|---|---|
| ##670 | [TX] | In V.8 late start, the V.8 ability was detected in DIS from the other party and, in response, CI was transmitted; however, the procedure failed to advance, causing a T1 time-over condition |
| ##671 | [RX] | In V.8 call arrives, the procedure fails to advance to phase 2 after CM detection, causing a T1 time-over condition |
| ##672 | [TX] | In V.34 transmission, the procedure fails to move from phase 2 to phase 3 and later, causing a T1 time-over condition |
| ##673 | [RX] | In V.34 reception, the procedure fails to move from phase 2 to phase 3 and later, causing a T1 time-over condition |
| ##674 | [TX] | In V.34 transmission, the procedure fails to move from phase 3 or phase 4 to a control channel or later, causing a T1 time-over condition |
| ##675 | [RX] | In V.34 reception, the procedure fails to move from phase 3 or phase 4 to a control channel or later, causing a T1 time-over condition |
| ##750 | [TX] | In ECM transmission, no significant signal can be received after transmission of PPS-NULL, and the allowed number of procedure signal re-transmissions was exceeded |
| ##752 | [TX] | In ECM transmission, DCN was received after transmission of PPS-NULL |
| ##753 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of PPS-NULL |
| ##754 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded after transmission of PPS-NULL |
| ##755 | [TX] | In ECM transmission, no significant signal can be received after transmission of PPS-MPS, and the allowed number of procedure signal re-transmissions was exceeded |
| ##757 | [TX] | In ECM transmission, DCN was received after transmission of PPS-MPS |
| ##758 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of PPS-MPS |
| ##759 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded after transmission of PPS-MPS |
| ##760 | [TX] | In ECM transmission, no significant signal can be received after transmission of PPS-EOM, and the allowed number of procedure signal re-transmissions was exceeded |
| ##765 | [TX] | In ECM transmission, no significant signal can be received after transmission of PPS-EOP, and the allowed number of procedure signal re-transmissions was exceeded |
| ##767 | [TX] | In ECM transmission, DCN was received after transmission of PPS-EOP |

| No. | Tx or Rx | Definition |
|---|---|---|
| ##768 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of PPS-EOP |
| ##769 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded after transmission of PPS-EOP |
| ##770 | [TX] | In ECM transmission, no significant signal can be received after transmission of EOR-NULL, and the allowed number of procedure signal re-transmissions was exceeded |
| ##772 | [TX] | In ECM transmission, DCN was received after transmission of EOR-NULL |
| ##773 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of EOR-NULL |
| ##774 | [TX] | In ECM transmission, ERR was received after transmission of EOR-NULL |
| ##775 | [TX] | In ECM transmission, no significant signal can be received after transmission of EOR-MPS, and the allowed number of procedure signal re-transmissions was exceeded |
| ##777 | [TX] | In ECM transmission, DCN was received after transmission of EOR-MPS |
| ##778 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of EOR-MPS |
| ##779 | [TX] | In ECM transmission, ERR was received after transmission of EOR-MPS |
| ##0780 | [TX] | In ECM transmission, no significant signal can be received after transmission of EOR-EOM, and the allowed number of procedure signal re-transmissions was exceeded |
| ##782 | [TX] | In ECM transmission, DCN was received after transmission of EOR-EOM |
| ##783 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of EOR-EOM |
| ##784 | [TX] | In ECM transmission, ERR was received after transmission of EOR-EOM |
| ##785 | [TX] | In ECM transmission, no significant signal can be received after transmission of EOR-EOP, and the allowed number of procedure signal re-transmissions was exceeded |
| ##787 | [TX] | In ECM transmission, DCN was received after transmission of EOR-EOP |
| ##788 | [TX] | In ECM transmission, the allowed number of procedure signal re-transmissions was exceeded or a T5 time-over (60 sec) condition occurred after transmission of EOR-EOP |

| No. | Tx or Rx | Definition |
|---|---|---|
| ##789 | [TX] | In ECM transmission, ERR was received after transmission of EOR-EOP |
| ##790 | [RX] | In ECM reception, ERR was transmitted after reception of EOR-Q |
| ##791 | [TX/RX] | During an ECM mode procedure, a signal other than a significant signal was received |
| ##792 | [RX] | In ECM reception, PPS-NULL between partial pages cannot be detected |
| ##793 | [RX] | In ECM reception, no effective frame was detected while signals were received at high speed, and a time-over condition occurred |
| ##794 | [TX] | Receive All 0 PPR during ECM Transmission |
| ##795 | [TX/RX] | A fault occurred in decoding process during a communication |

### d) New error codes and recovery methods

Those error codes that have been added starting with the product and those error codes for which remedies unique to the product are offered are shown together with causes and remedies, where applicable.

**##085 Other party does not support ITU-T Color Faxing**

**Solution:** (1) Try sending again in black & white.
(2) Check the received fax machine's setting for color faxing is available.
(3) Chang the setting of MENU> MAINTENANCE> TX SETTINGS> COLOR DIRECT TX to ON.

**##341 Maintenance jet waste ink capacity full**

**Solution:** Unlike errors that trigger the **"CHECK PRINTER"** message, This error is programmed so that it cannot be cleared using the **Resume** key. Replace the waste ink absorber as follows in the error occurs:
(1) Select 3. EEPROM CLEAR under [8] PRINTER TEST in TEST mode, and the select 0.
(2) Check to make sure that no image exist in memory; then, turn off the power, remove the appropriate parts, and replace the waste ink absorber.

**##342 Cleaning absorption waste ink capacity full**

**Solution:** Unlike errors that trigger the **"CHECK PRINTER"** message, This error is programmed so that it cannot be cleared using the **Resume** key. Replace the waste ink absorber as follows in the error occurs:
(1) Select 3. EEPROM CLEAR under [8] PRINTER TEST in TEST mode, and the select 0.
(2) Check to make sure that no image exist in memory; then, turn off the power, remove the appropriate parts, and replace the waste ink absorber.

**##343 Ink detection waste ink capacity full**

**Solution:** Unlike errors that trigger the **"CHECK PRINTER"** message, This error is programmed so that it cannot be cleared using the **Resume** key. Replace the waste ink absorber as follows in the error occurs:
(1) Select 3. EEPROM CLEAR under [8] PRINTER TEST in TEST mode, and the select 0.
(2) Check to make sure that no image exist in memory; then, turn off the power, remove the appropriate parts, and replace the waste ink absorber.

### ##352 Printer control EEPROM head information error

**Cause:** The EEPROM for printer control is faulty.

**Solution:** (1) Turn off and then on the power.
(2) Turn off the power, and replace the printhead.
(3) Replace the SPCNT board.

**NOTE**

In the presence of ##352, the carriage unit will not move to printhead replacement position even when the inner cover is opened. Moreover the carriage will not be locked in position even when the power is turned off.When replacing the printhead, be sure to turn off the power, and draw out the carriage before replacement.

### ##354 Mechanical malfunction of BJ printer

**Solution:** (1) Press the **Resume** key.
(2) Replace the SPCNT board.

## 4.3 Errors not Shown on the Display

### 4.3.1 General errors

**• The unit does not power on.**

(1) Check the power cord connection.
(2) Check the connection between the SPCNT board (JPSU1) and power supply unit.
(3) Check the power supply unit's fuse (F1).
(4) Replace the power supply unit.

**• The display looks abnormal.**

**Nothing is displayed.**

(1) Check the connection between the Operation panel unit and SPCNT board (JPANEL1).
(2) Replace the Operation panel unit.
(3) Replace the SPCNT board.

**Part of the LCD panel does not display anything.**

(1) Check the connection between the Operation panel unit and SPCNT board (JPANEL1).
(2) Replace the Operation panel unit.
(3) Replace the SPCNT board.

**The keys do not work.**

(1) If the test mode can be used, check for faulty keys.
(2) Check the connection between the Operation panel unit and SPCNT board (JPANEL1).
(3) Replace the Operation panel unit.
(4) Replace the SPCNT board.

**• No sound from the speaker (MP730 only)**

(1) Check the connection of the speaker and SPCNT board (JSPK1).
(2) Replace the speaker.
(3) Replace the SPCNT board.

## 4.3.2 Printing problems

**• The paper is not feed properly. (Evaluation criteria: Look at the actual unit.)**

**The Paper feed motor does not run.**

(1) Check the connection from the paper feed motor to the sensor board (JLF1).
(2) Replace the sensor board.
(3) Replace the paper feed motor. (In this case, you must replace the printer unit (HM1-0453) which contains the paper feed motor.)

**The paper is not picked up from the auto sheet feeder.**

(1) Check the connection ASF motor to the sensor board (J7).
(2) Check the foreign matter in the paper feed section.
(3) Replace the ASF unit.
(4) Replace sensor board (Faulty PRS or PES).

**• The printing operation is abnormal.**

**Nothing is printed.**

(1) Remove the printhead and re-install it.
(2) Execute cleaning five times, and try printing again.
(3) Replace the printhead.
(4) Replace the ink tank.
(5) Check the connection between carriage ribbon cable and SPCNT board (J1, J2, J3).
(6) Replace the carriage unit.
(7) Replace the SPCNT board.

**The carriage motor does not run.**

(1) Check the connection from the carriage motor to the sensor board (JCRM1).
(2) Check the connection from the sensor board(JEXT1,JEXT2) to the SPCNT board (JEXT1,JEXT2).
(3) Replace the carriage motor.
(4) Replace the sensor board.
(5) Replace the SPCNT board.

**• Carriage error**

**The carriage comes into contact with the push-on plates at the left and right sides, resulting in noise.**

(1) Check if grease adheres to the carriage encoder film.
(2) Using lint-free paper impregnated with alcohol, wipe the carriage encoder film with care so as not to scratch the film.
(3) If a lot of grease adheres to the carriage, replace the carriage board because grease might be spread to the sensor on the carriage board. (In this case, you must replace the carriage unit (HM1-0455) which contains the carriage board.)
(4) Replace the carriage encoder film.

**• Printing quality error**

**• The printer does not at all.**

**• Printing stops midway.**

**• Certain colors are not printed.**

(1) Check that the orange cap or tape is not on the printhead.
(2) Remove the printhead and re-install it.
(3) Carry out nozzle cleaning on the printhead five times with the cleaning operation, than visually cheek the test print for non-discharge of ink from nozzle. (*Fig. 4-7*)
(4) Remove and reinstall the printhead.
(5) Replace the appropriate ink tank.
(6) Replace the printhead.
(7) Replace the purge unit.

**• Blotches appear**

**• Blank ink appear**

(1) Carry out nozzle cleaning on the printhead five times with the cleaning operation, than visually cheek the test print for non-discharge of ink from nozzle. (*Fig. 4-7*)
(2) Remove and reinstall the printhead.
(3) Replace the appropriate ink tank.
(4) Replace the printhead.
(5) Check the connection of the carriage ribbon cable and the SPCNT board. (CN201,CN202,CN203)
(6) Replace the carriage unit.
(7) Replace the SPCNT board.
(8) Replace the purge unit.

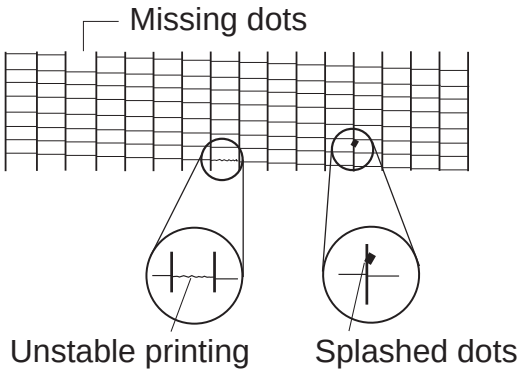



**Figure 4-7 Defective Pattern (Sample)**

### 4.3.3 Scanning problems

**• Faulty scanning (Evaluation criteria: Test print is good, but the copied image is no good.)**

**• The document is not fed.**

**The document feed motor does not run. (Evaluation criteria: Check it visually.)**

(1) Check the connection from the document feed motor to the ADF board (JFM).
(2) Check the connection from the ADF board and sensor board sub PCB (JADF3).
(3) Check the connection from the sensor board(JEXT1,JEXT2) and SPCNT board (JEXT1,JEXT2).
(4) Replace the document feed motor.
(5) Replace the ADF board.
(6) Replace the sensor board.
(7) Replace the SPCNT board.

**The document slips against the rollers. (Evaluation criteria: Check it visually. Stretched copy image.)**

(1) See *this Chapter 2. HOW TO CLEAN PARTS* and clean the document reading section.
(2) Replace the ADF section's rollers.

**The document does not separate. (Evaluation criteria: Check it visually.)**

(1) Check whether the document feed motor is driving all the rollers. (Check for any damaged gears or foreign matter stuck inside.)
(2) See *Chapter 2. HOW TO CLEAN PARTS* and clean the separation roller and separation guide.
(3) Replace the separation roller and separation guide.

**Faulty scanner unit's sensors (Evaluation criteria: The placed document or transported document is not detected.)**

(1) Check for any faulty sensors while executing the copying operation and test mode.
(2) Check the connection from Document sensor and Document edge sensor to the ADF board (JDS, JDES).
(3) Check the connection from the ADF board to the sensor board sub PCB (JADF3).
(4) Check the connection from the sensor board(JEXT1,JEXT2) and SPCNT board (JEXT1,JEXT2).
(5) Replace the Document sensor.
(6) Replace the Document edge sensor.
(7) Replace the ADF board.
(8) Replace the sensor board.
(9) Replace the SPCNT board.

**• The scanning image is abnormal. (Evaluation criteria: Check the copy image's faults.)**

**Nothing is printed.**

(1) Check the connection between the contact sensor and SPCNT board (JCS1).
(2) The white sheet by the side of the reverse side of document glass is cleaned.
(3) Replace the contact sensor unit.
(4) Replace the document glass.
(5) Replace the SPCNT board.

**The image has vertical stripes.**

(1) Clean the Document glass.
(2) The white sheet by the side of the reverse side of document glass is cleaned.
(3) Check the connection between the contact sensor and SPCNT board (JCS1).
(4) Replace the document glass.
(5) Replace the contact sensor unit.
(6) Replace the SPCNT board.

**The halftone image contains black dots.**

(1) Clean the Document glass.
(2) The white sheet by the side of the reverse side of document glass is cleaned.
(3) Check the connection between the contact sensor and SPCNT board (JCS1).
(4) Adjust the CS LED lights-on duration. See *this Chapter 3.1 CS LED Lights-on Duration Adjustment*.
(5) Replace the document glass.
(6) Replace the contact sensor unit.
(7) Replace the SPCNT board.

**The color or brightness of the image is not normal.**

(1) Clean the Document glass.
(2) The white sheet by the side of the reverse side of document glass is cleaned.
(3) Adjust the CS LED lights-on duration. See *his Chapter 3.1 CS LED Lights-on Duration Adjustment*.
(4) Replace the document glass.
(5) Replace the contact sensor unit.
(6) Replace the SPCNT board.

## 4.3.4 Memory card problem

**• Memory card error**

**The card is not recognized.**

(1) Detach the memory card, and fit it back once again.
(2) Check to see if the memory card contains image data using a digital camera or computer.
(3) Check the connection between the multi card reader board and the SPCNT board (JCARD1).
(4) Replace the multi card reader board.
(5) Replace the SPCNT board.

## 4.3.5 Test mode function problems

**• Faulty operation panel test.**

**The LED panel does not display correctly.**

(1) Check the connection between the operation panel unit and the SPCNT board (JPANEL1).
(2) Replace the operation panel unit.
(3) Replace the SPCNT board.

**The LED lamp fails to go ON.**

(1) Check the connection between the operation panel unit and the SPCNT board (JPANEL1).
(2) Replace the operation panel unit.
(3) Replace the SPCNT board.

**The key on the operation panel fails to work properly.**

(1) Check the connection between the operation panel unit and the SPCNT board (JPANEL1).
(2) Replace the operation panel unit.
(3) Replace the SPCNT board.

**• Faulty contact sensor test.**

**The LED of the contact sensor fails to go ON properly.**

(1) Check the connection between the contact sensor and the SPCNT board (JCS1).
(2) Replace the contact sensor.
(3) Replace the SPCNT board.

**• Faulty DRAM test.**

**The indication "READ & COMPARE NG" appears.**

(1) Perform the DRAM test again. In case "READ & COMPARE NG" still appears, replace the SPCNT board.

**• Faulty Sensor test.**

**Paper edge sensor fails to operate properly.**

(1) Check whether the actuator of paper edge sensor is in correct position.
(2) Replace the sensor board.

**Cover sensor fails to operate properly.**

(1) Check whether the actuator of cover sensor is in correct position.
(2) Replace the SPCNT board.

## 4.4 Processing Communication Problems

### 4.4.1 Initial identification of problems

Since the facsimile must transmit picture information, a transmitter, a receiver and telephone lines are required for this purpose. Transmissions may cause problems if one or more of the there is poor.

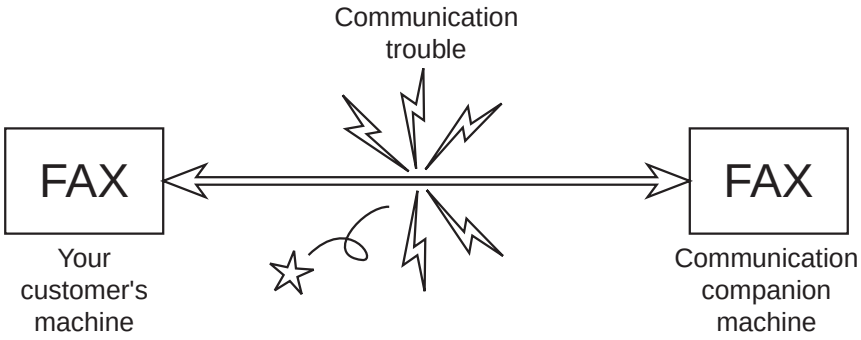



**Figure 4-8 Communication Trouble**

To process communication problems, first of all, it is necessary to narrow down the cause of the problem. Thus, the procedures appearing below must be checked accordingly.

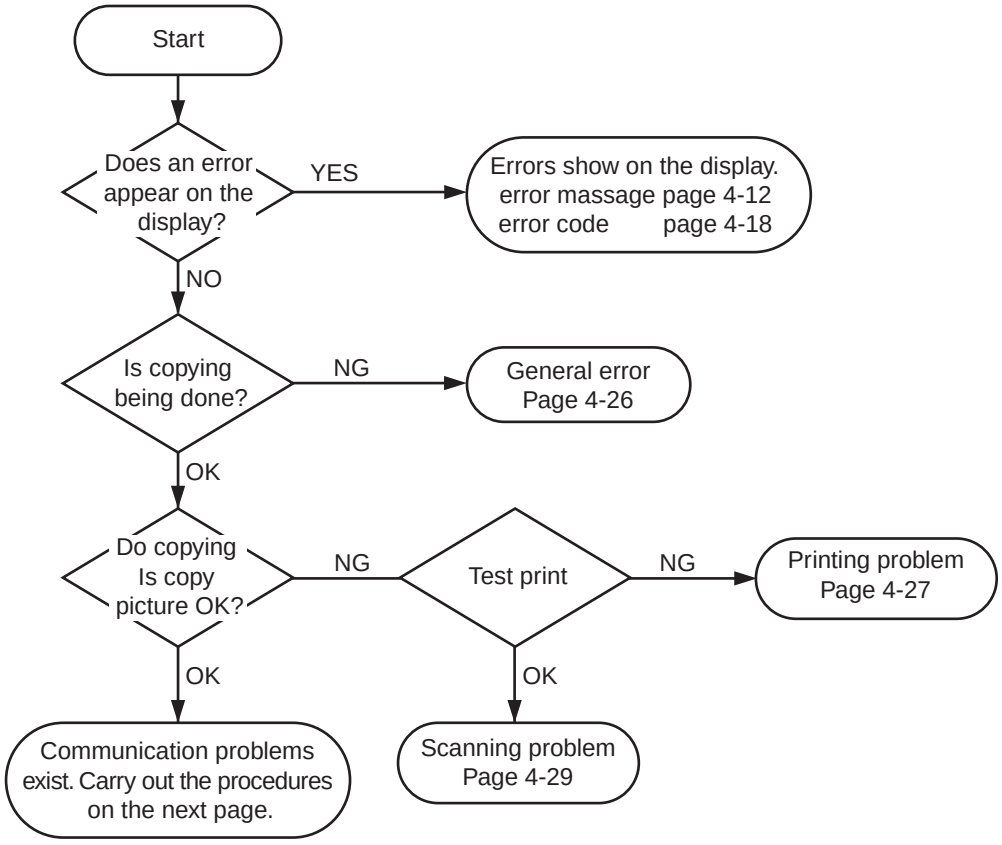



**Figure 4-9 Procedures for Initial Identification of Trouble**

## 4.4.2 Procedures for processing communication problems

If the problem proves to be communication trouble, deal with it according to the following procedures.

(1) Study the conditions at the time of trouble as closely as possible. Record or keep the items listed below.

a) Operations at the time of trouble.
Document number, transmission mode, error occurrence timing call set-up method (auto dialing etc.)

b) Sample of defective picture (When receiving)

c) LCD display at the time of trouble.

d) Communication management report at the time of trouble.

e) User's name, telephone number (to contact), Fax number, model name.

f) User's name, of the other party, telephone number (to contact), Fax number, model name, name of servicemen in charge.

g) Frequency of trouble and error code (##100 etc.).

h) Condition of the other party's facsimile:
Transmitted/received page number? Automatic or manual?
Error occurred? The receive condition? etc.

NOTE

When visiting a user with a trouble report, a) can be known by outputting the error protocol data (or error dump), and g) can be known by outputting the total transaction report (or the system error data list).

(2) Test communication according to flowchart procedures appearing on the next page.
- Carry out the tests with the actual lines on each item, verify the symptoms and record it.
- In the case of trouble with another manufacturer's facsimile, refer to the flowchart for troubles with other manufacture's.

(3) Finally, process over by judging systematically all the data.

NOTE

If the other party's facsimile is that of another manufacturer and there is nothing wrong with your customer's machine, it is recommended that you ask your customer to contact the facsimile user of the other party, so that the other party's facsimile is checked by the dealer. "Call the service station" in the flowchart (Fig.4-11) means that problems may occur with regard to the communication compatibility of facsimile, consult the matter with the staff in charge at the service station. To quicken the resolving of the problem, report the information listed in (1) above.

• Procedures for processing communication problems with Canon facsimile.

The process for carrying out communications at three points as shown in the figure.

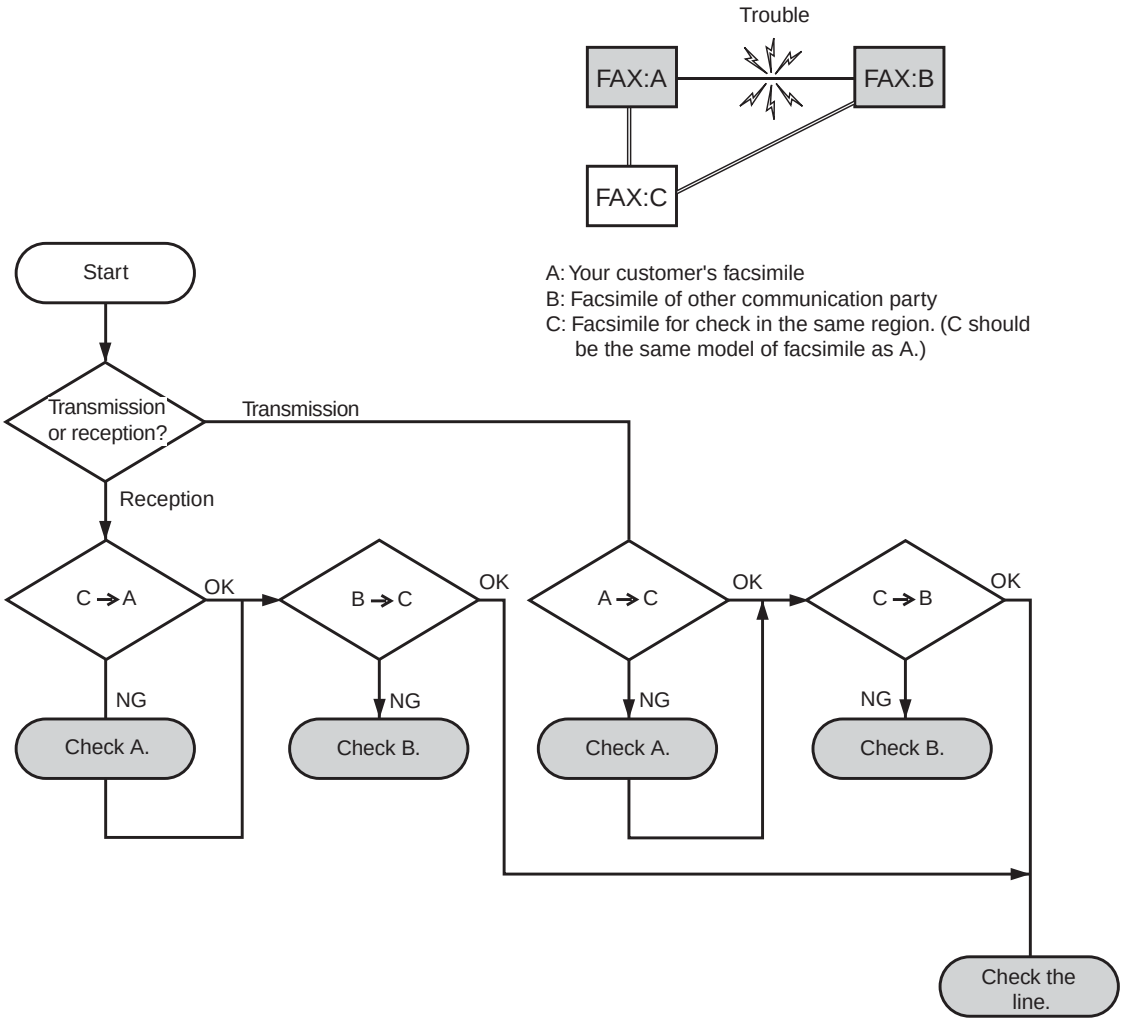



**Figure 4-10 Flowchart for Processing Communication Troubles with Canon Facsimile**

- Procedures for processing communication problems with other manufacturer's facsimiles.
  When problems occur with other manufacturer's facsimiles, make the user of the other party's facsimile call the serviceman in charge. Perform communication at the four points listed in the figure.

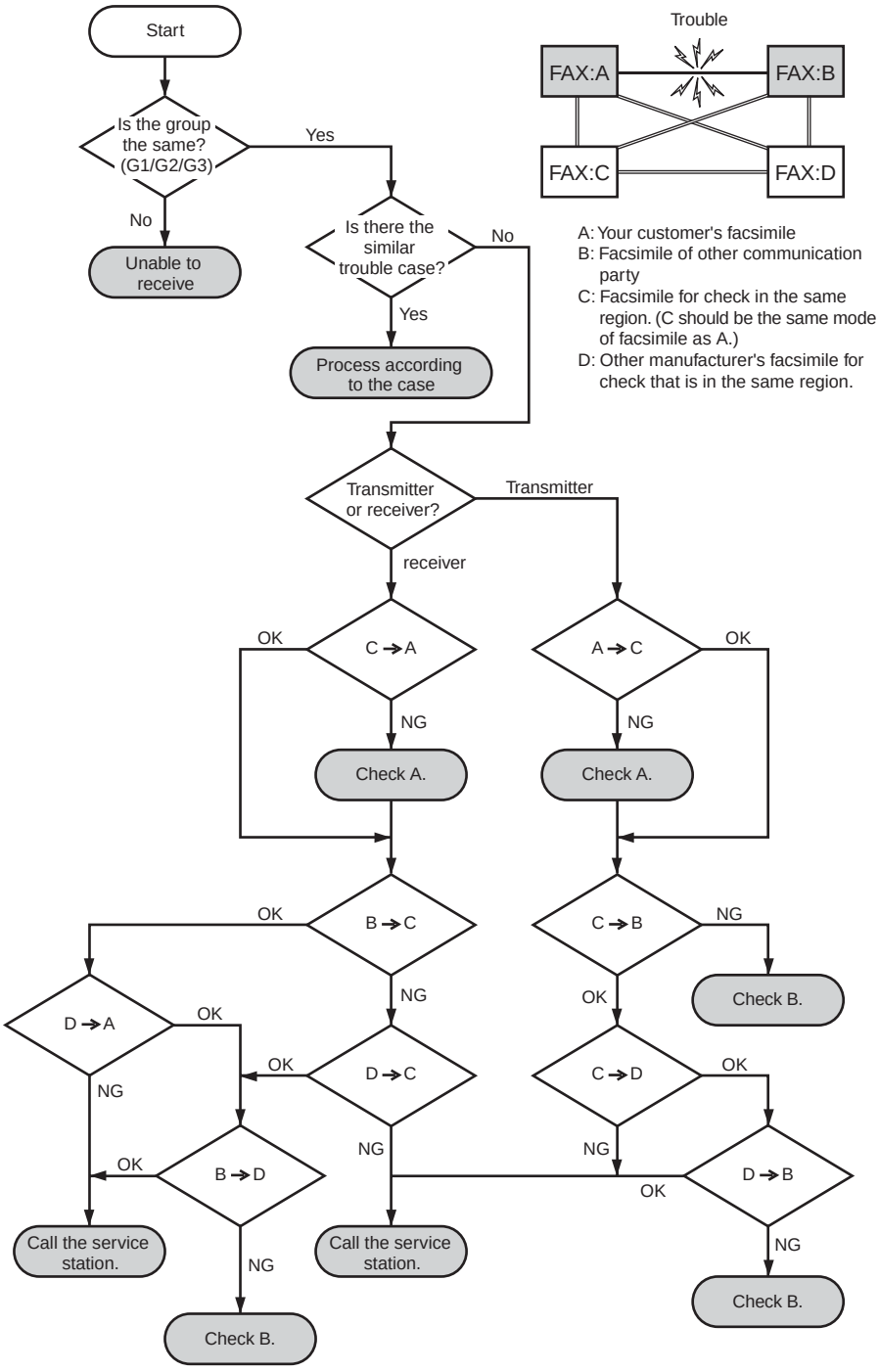



**Figure 4-11 Flowchart for Processing Communication Troubles with other manufacturer's facsimile**

# 5. SERVICE SWITCHES

## 5.1 Hardware Switches

There is no service hardware switch on the Circuit board.

## 5.2 Service Data Setting

Service data can be checked and changed with items on display menus. The effective SSSWs/parameters and their default values in this fax machine are shown in *5.4 Service Data Flowchart* in this chapter. Detailed description of each SSSW/parameter is not given in this manual except the new SSSWs/parameters added to this model. See *G3 Facsimile SERVICE DATA HANDBOOK (Rev. 0) (supplied separately)* for details of them. The new switches for this model are described in *5.6 New SSSWs/Parameters Added to this Model*.

### #1 SSSW (Service soft switch settings)

These setting items are for basic fax service functions such as error management, echo countermeasures, and communication trouble countermeasures.

### #2 MENU (MENU switch settings)

These setting items are for functions required during installation, such as NL equalizer and transmission levels.

### #3 NUMERIC Param. (NUMERIC parameter settings)

These setting items are for inputting numeric parameters such as the various conditions for the FAX/TEL switching function.

### #4 NCU (NCU settings)

These setting items are for telephone network control functions such as the selection signal transmission conditions and the detection conditions, for the control signals sent from the exchange.

### #5 TYPE (TYPE setting)

The type setting makes the service data conform to a specific country communications standards. There is only one setting item in this block.

### #6 GENESIS (UHQ function setting)

These setting items are for scanned image processing such as edge enhancement and error diffusion processing.

### #7 PRINTER (PRINTER function settings)

These setting items are for basic printer service functions such as the reception picture reduction conditions. Also there is an item for resetting the printer section without switching the power off-on.

### #8 CLEAR (Data initialization mode)

Various data are initialized by selecting one of these setting items. There is a setting item for checking/inputting the total number of pages printed and total number of pages scanned by this fax.

### #9 ROM (ROM management)

ROM data such as the version number and checksum are displayed.

### #10 CS SET (CS unit position)

Use it to change the Contact sensor unit back to its position at time of shipment.

## 5.3 Service Data Registration/Setting Method

Service data can be registered/set by the following operations:

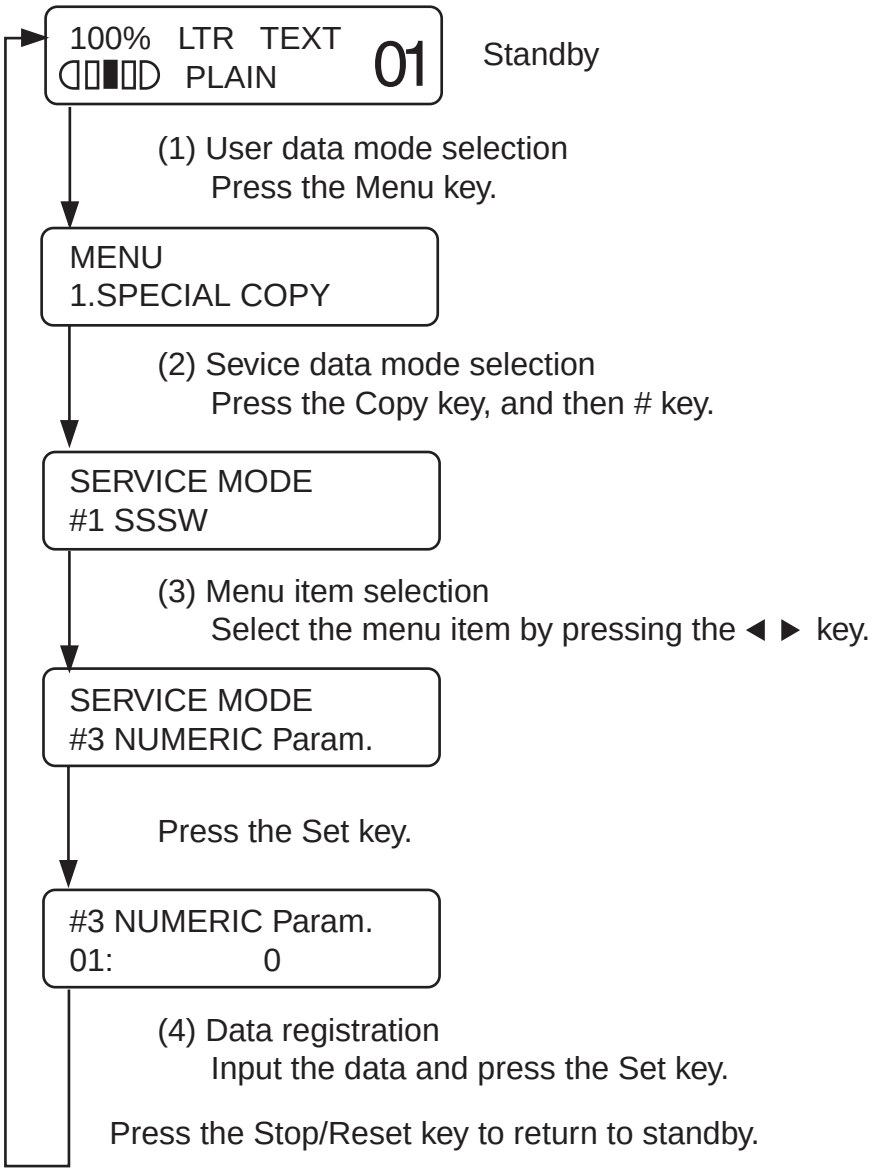



**Figure 4-12 Service Data Setting Method**

**Precautions when registering/setting service data(MP730 only)**

Detach the telephone line before registering service data. We cannot guarantee the integrity of any reception of transmission operations during the registration process.

## 5.4 Service Data Flowchart

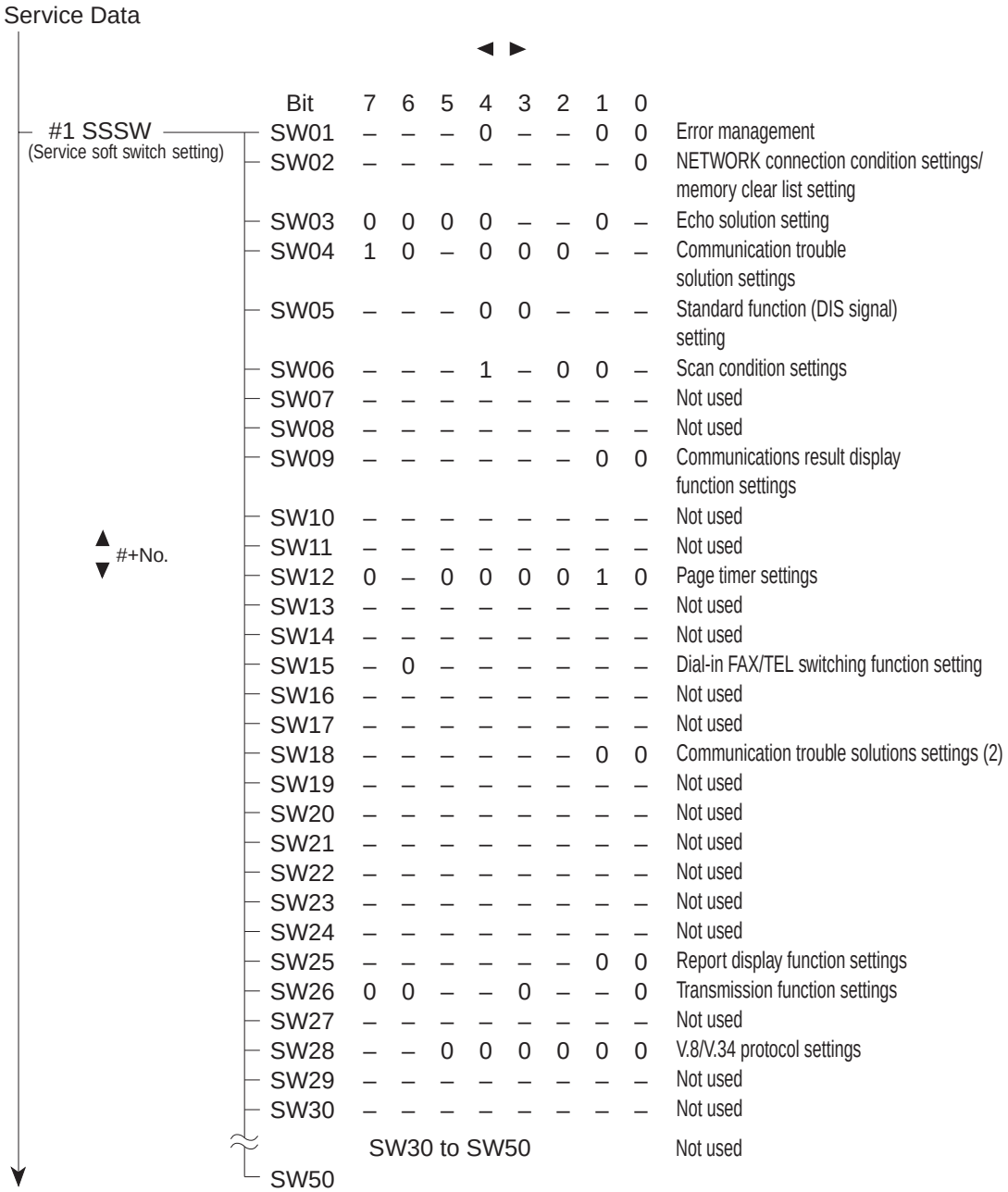

Service Data
◄ ►
Bit 7 6 5 4 3 2 1 0
#1 SSSW
(Service soft switch setting)
SW01 – – – 0 – – 0 0 Error management
SW02 – – – – – – – 0 NETWORK connection condition settings/ memory clear list setting
SW03 0 0 0 0 – – 0 – Echo solution setting
SW04 1 0 – 0 0 0 – – Communication trouble solution settings
SW05 – – – 0 0 – – – Standard function (DIS signal) setting
SW06 – – – 1 – 0 0 – Scan condition settings
SW07 – – – – – – – – Not used
SW08 – – – – – – – – Not used
SW09 – – – – – – 0 0 Communications result display function settings
SW10 – – – – – – – – Not used
SW11 – – – – – – – – Not used
#+No.
SW12 0 – 0 0 0 0 1 0 Page timer settings
SW13 – – – – – – – – Not used
SW14 – – – – – – – – Not used
SW15 – 0 – – – – – – Dial-in FAX/TEL switching function setting
SW16 – – – – – – – – Not used
SW17 – – – – – – – – Not used
SW18 – – – – – – 0 0 Communication trouble solutions settings (2)
SW19 – – – – – – – – Not used
SW20 – – – – – – – – Not used
SW21 – – – – – – – – Not used
SW22 – – – – – – – – Not used
SW23 – – – – – – – – Not used
SW24 – – – – – – – – Not used
SW25 – – – – – – 0 0 Report display function settings
SW26 0 0 – – 0 – – 0 Transmission function settings
SW27 – – – – – – – – Not used
SW28 – – 0 0 0 0 0 0 V.8/V.34 protocol settings
SW29 – – – – – – – – Not used
SW30 – – – – – – – – Not used
SW30 to SW50 Not used
SW50

**Figure 4-13 Service Data 1**

The switches marked "-" are not used. Do not change their settings.

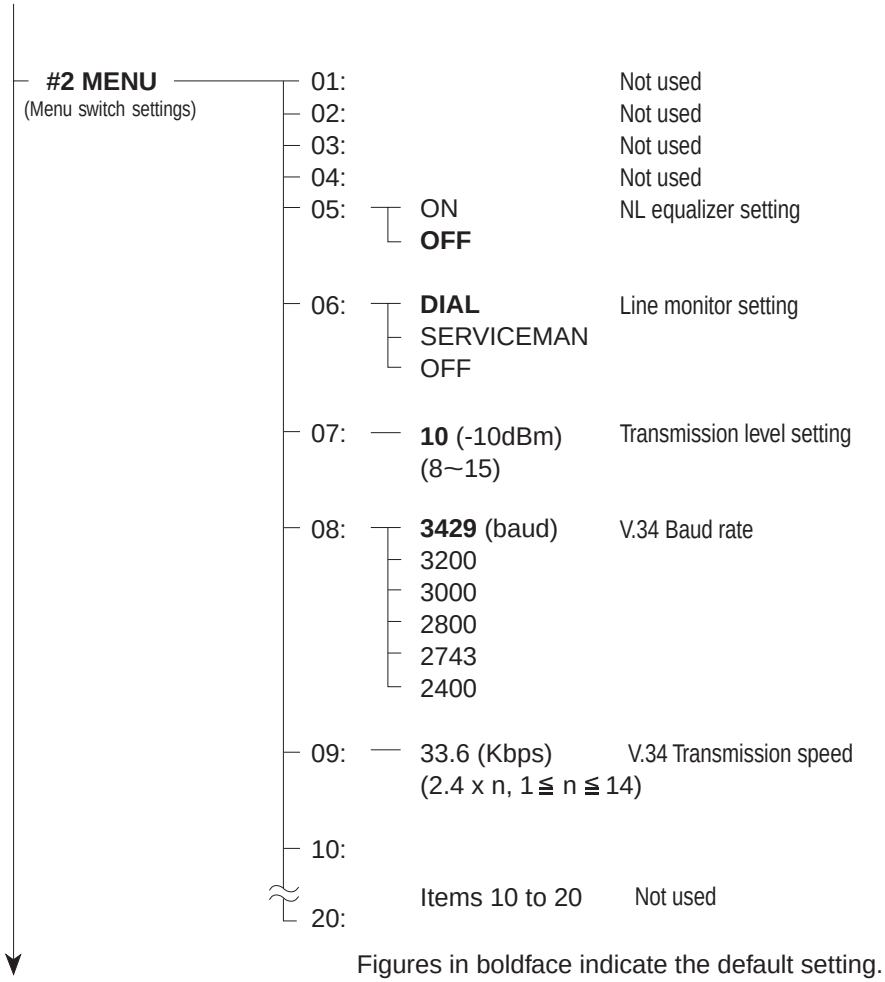



**Figure 4-14 Service Data (page 2)**

No.01 to 04, 10 to 20 are not used. Do not change their settings.

**#3 NUMERIC Param.**
(Numeric parameter settings)

| | Default | Range | |
|---|---|---|---|
| 01: | 0 | | Not used |
| 02: | 10 (10%) | (1~ 99) | RTN signal transmission condition (1) |
| 03: | 15 (15 lines) | (2~ 99) | RTN signal transmission condition (2) |
| 04: | 12 (12 times) | (1~ 99) | RTN signal transmission condition (3) |
| 05: | 4 | | Not used |
| 06: | 4 | | Not used |
| 07: | 350 | | Not used |
| 08: | 0 | | Not used |
| 09: | 6 (6 digits) | (1~ 20) | The number of digits in telephone number compared against TSI signal to be matched for restricted receiving function |
| 10: | 5500 (55 seconds) | (0~ 9999) | Line connection detection time (T0 timer) |
| 11: | 3500 (35 seconds) | (0~9999) | T1 Timer (Rx) |
| 12: | 0 | | Not used |
| 13: | 1300 | | Not used |
| 14: | 0 | | Not used |
| 15: | 120 (1200 ms) | (0~ 999) | Hooking detection time |
| 16: | 4 (4 seconds) | (0~ 9) | Pseudo RBT transmission from CML on time until start |
| 17: | 100 (1000 ms) | (0~ 999) | Pseudo RBT signal pattern: On time |
| 18: | 0 (0 ms) | (0~ 999) | Pseudo RBT signal pattern: off time (short) |
| 19: | 200 (2000 ms) | (0~ 999) | Pseudo RBT signal pattern: off time (long) |
| 20: | 100 (1000 ms) | (0~ 999) | Pseudo ring pattern: On time setting |
| 21: | 0 (0ms) | (0~ 999) | Pseudo ring pattern: Off time (short) |
| 22: | 200 (2000 ms) | (0~ 999) | Pseudo ring pattern: Off time (long) |
| 23: | 44 | (Do not change) | FAX/TEL switching function signal detection level |
| 24: | 20 | (0~ 20) | Pseudo-RBT signal transmission level |
| 25: | 60 (600 ms) | (0~ 999) | Answering machine connection function signal detection time |
| 26: | 44 | (Do not change) | Answering machine connection no-sound detection level |
| 27: | 0 | | Not used |
| 28: | 0 | | Not used |
| 29: | 0 | | Not used |
| 30: | 10 | | Not used |

**Figure 4-15 Service Data 3**

No. 01, 05 to 08, 012 to 14, 27 to 30 are not used. Do not change their settings.

NOTE

**#3 NUMERIC PARAM. (Numeric parameter settings)**

The relationship between the settings and the detection levels is as follows:

**Parameter 24**

| | | | | |
|---|---|---|---|---|
| 0: Not used | 1: Not used | 2: Not used | 3: Not used | 4: Not used |
| 5: -8 dBm | 6: -9 dBm | 7: -10 dBm | 8: -11 dBm | 9: -12 dBm |
| 10: -13 dBm | 11: -14 dBm | 12: -15 dBm | 13: -16 dBm | 14: -17 dBm |
| 15: -18 dBm | 16: -19 dBm | 17: -20 dBm | 18: -21 dBm | 19: -22 dBm |
| 20: -23 dBm | | | | |

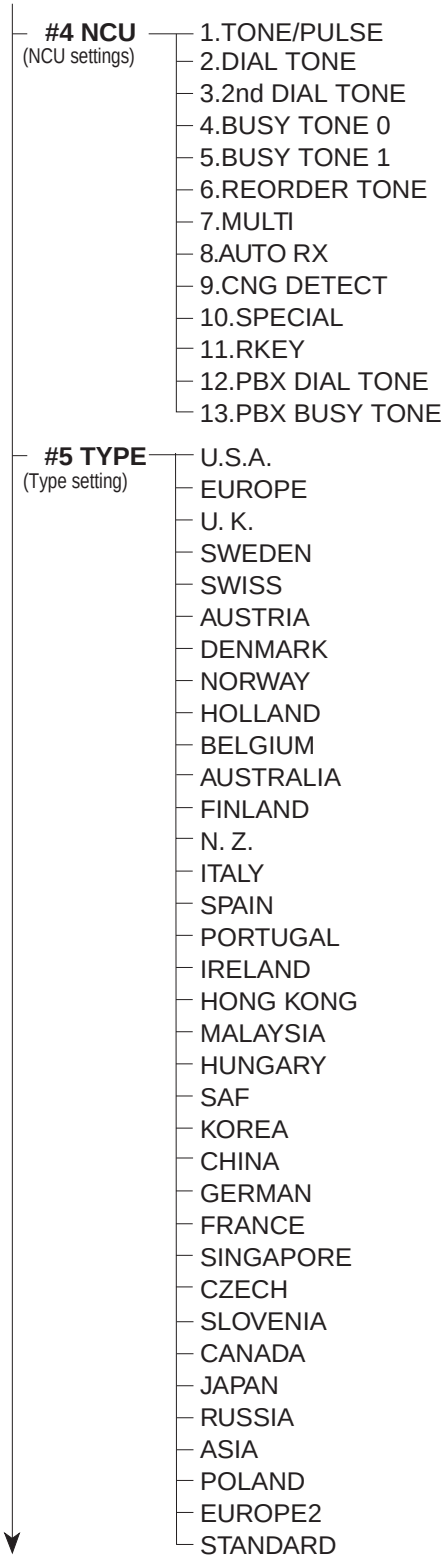



**Figure 4-16 Service Data 4**

**#4 NCU (NCU settings)**

The values of these items are all set to match a specific nation's communications standards by the #5 TYPE setting. Do not change these setting.

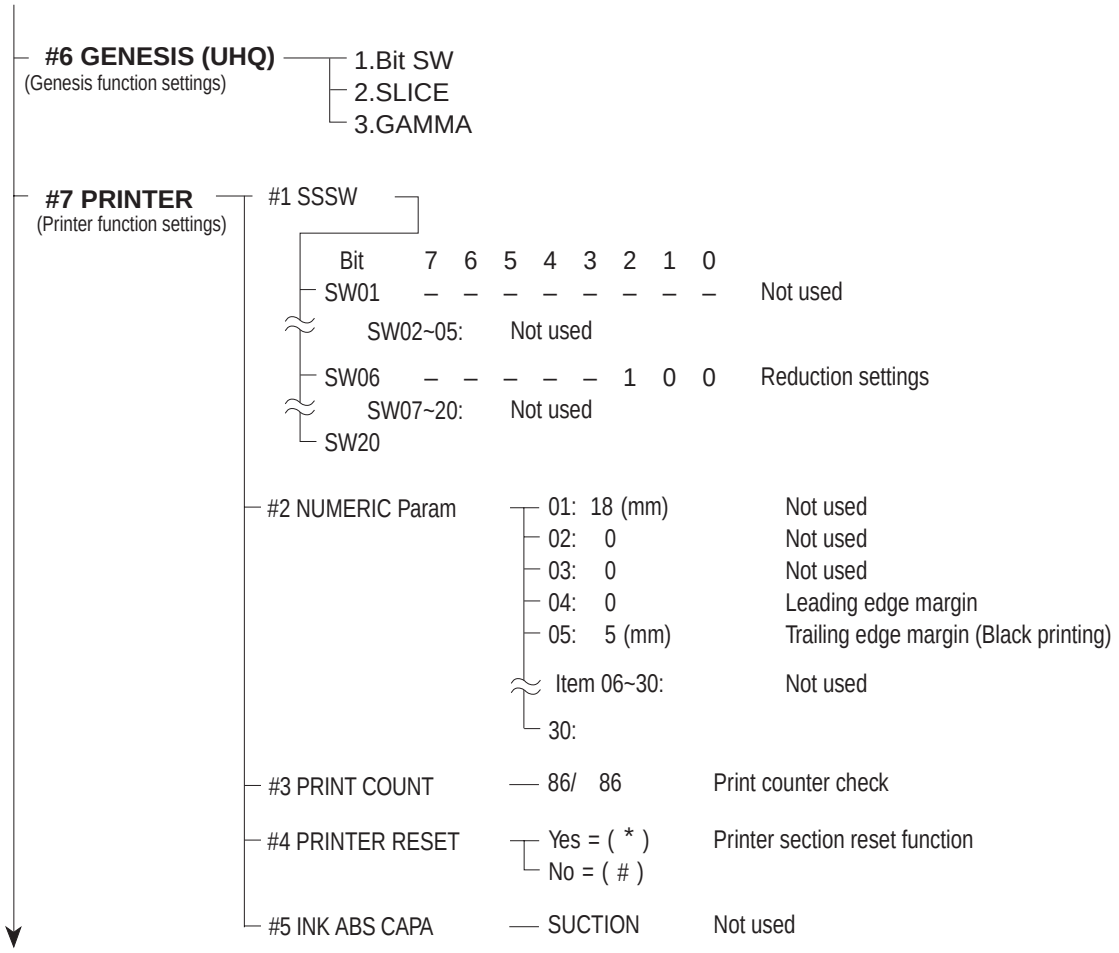

#6 GENESIS (UHQ)
(Genesis function settings)
1.Bit SW
2.SLICE
3.GAMMA
#7 PRINTER
(Printer function settings)
#1 SSSW
Bit 7 6 5 4 3 2 1 0
SW01 – – – – – – – – Not used
SW02~05: Not used
SW06 – – – – – 1 0 0 Reduction settings
SW07~20: Not used
SW20
#2 NUMERIC Param
01: 18 (mm) Not used
02: 0 Not used
03: 0 Not used
04: 0 Leading edge margin
05: 5 (mm) Trailing edge margin (Black printing)
Item 06~30: Not used
30:
#3 PRINT COUNT
86/ 86 Print counter check
#4 PRINTER RESET
Yes = ( * )
No = ( # )
Printer section reset function
#5 INK ABS CAPA
SUCTION Not used

**Figure 4-17 Service Data 5**

**#6 GENESIS (UHQ function settings)**

Tampering with this setting may cause the scanned image quality to deteriorate. Do not change these settings.

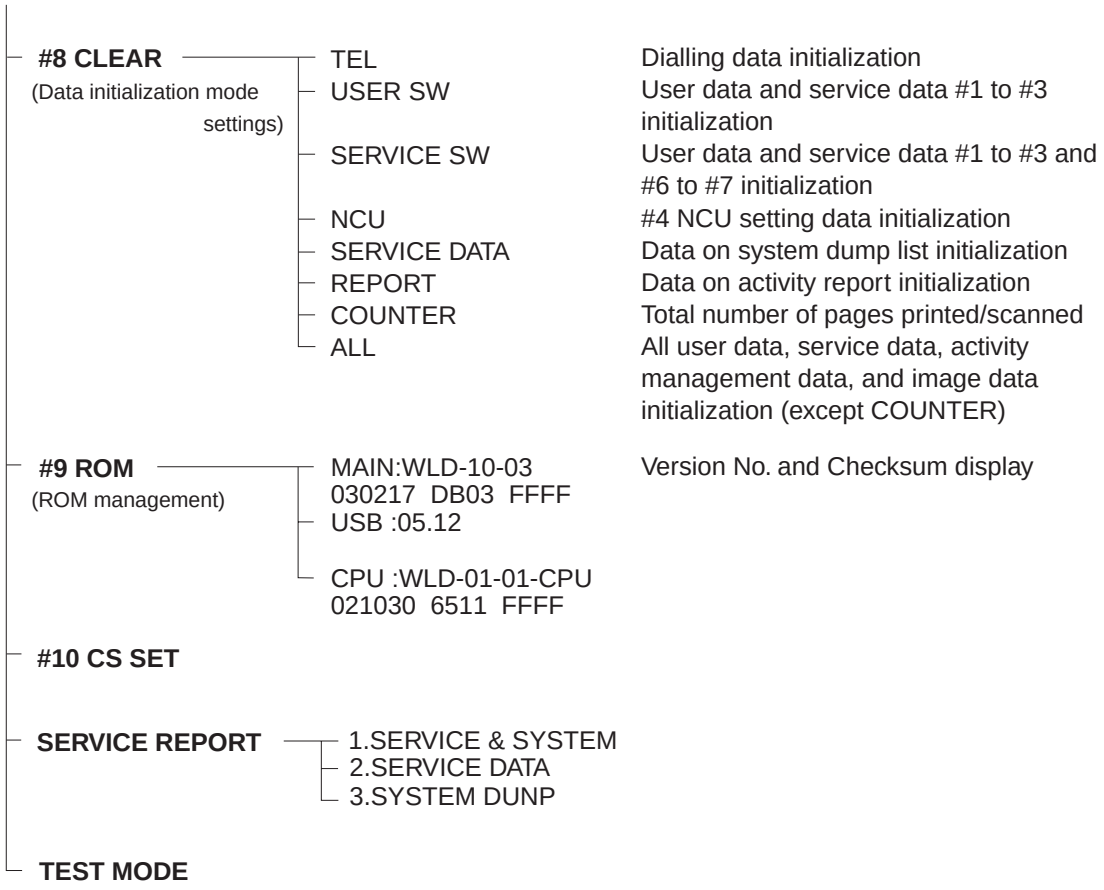



**Figure 4-18 Service Data 6**

**NOTE**

If USER SW is selected from #8 CLEAR, the memory management of the user data is not cleared. If TEL or SERVICE SW is selected, the memory management of the user data is cleared.

**REFERENCE**

For details on test mode, see *this Chapter 6.2 Service Test Functions*

## 5.5 Explanation of Service Data

### a) SSSW (Service Soft Switch settings)

The items registered and set by each of these switches comprise 8-bit switches. The figure below shows which numbers are assigned to which bits. Each bit has a value of either 0 or 1.

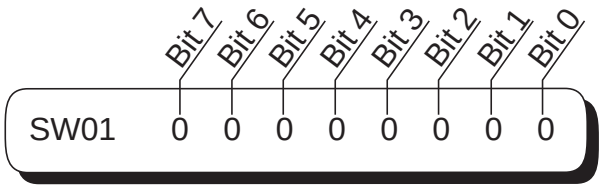
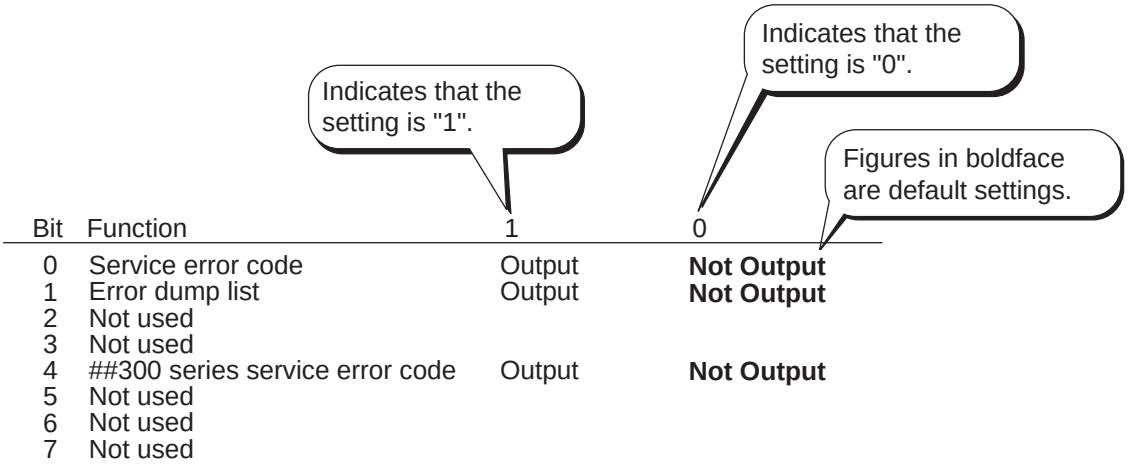



**Figure 4-19 Bit Switch Display**

Refer to "5.4 Service Data Menu" for the details of the service switches and the initial setup values of this machine. Because this machine does not have any new additional service data, for further details of service data, refer to the separate volume, "G3/G4 Facsimile Service Data Service Handbook (revised ver.1)".
Below are examples showing how to read bit switch tables.




| Bit | Function | 1 | 0 |
|---|---|---|---|
| 0 | Service error code | Output | **Not Output** |
| 1 | Error dump list | Output | **Not Output** |
| 2 | Not used | | |
| 3 | Not used | | |
| 4 | ##300 series service error code | Output | **Not Output** |
| 5 | Not used | | |
| 6 | Not used | | |
| 7 | Not used | | |

**Figure 4-20 How to Read Bit Switch Tables**

Do not change the settings of switches listed as "Not used".

# 6. TEST FUNCTIONS

## 6.1 User Test Print Functions

User enabled Test print functions are as follow.

### 6.1.1 Nozzle check pattern

If you find a nozzle pattern indistinct or partially missing when you conduct this test print, do the head cleaning. If the symptom is not solved even after the cleaning is done three times, do the head refreshing. If the head refreshing does not solve the symptom, replace the BJ cartridge or the ink cartridge. The method of printing a nozzle check pattern is to press the **Menu** key, select **MAINTENANCE** using < / > keys, and press the **Set** key. Select **NOZZLE CHECK** using < / > keys, and then press the **Set** key.

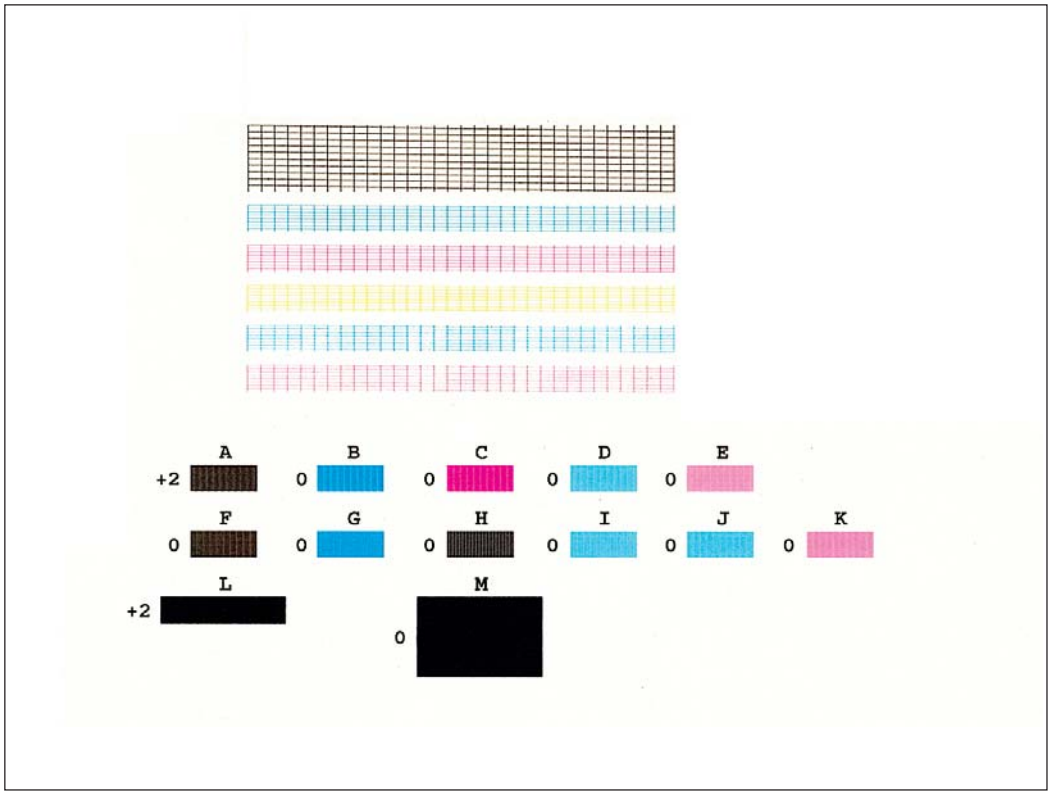



**Figure 4-21 Nozzle Check Pattern Print**

## 6.2 Service Test Functions

The fax functions for testing individual operations, such as below.

See 5.3 Service Data Registration/Setting Method for details of entering the test mode. To leave the test mode, press the **Stop/Reset** key, and then **ON/OFF** key.

### 6.2.1 Test mode overview

Test mode can be executed by following the menu items from the display.

**a) DRAM tests**

Writes data to DRAM image storage areas and reads that data to check operations.

**b) CS test**

CS test is used to enter the contact sensor's shading data.

**c) Print test**

Prints nine different patterns within the print area.

**d) Modem, NCU tests**

The frequency test and the G3 signal transmission and CNG signal and DTMF signals reception tests.

**e) Faculty tests**

Test the operation of operation panel and sensor functions.

**f) PRINTER tests**

Ink absorber capacity is reset.

## 6.2.2 Test mode flowchart

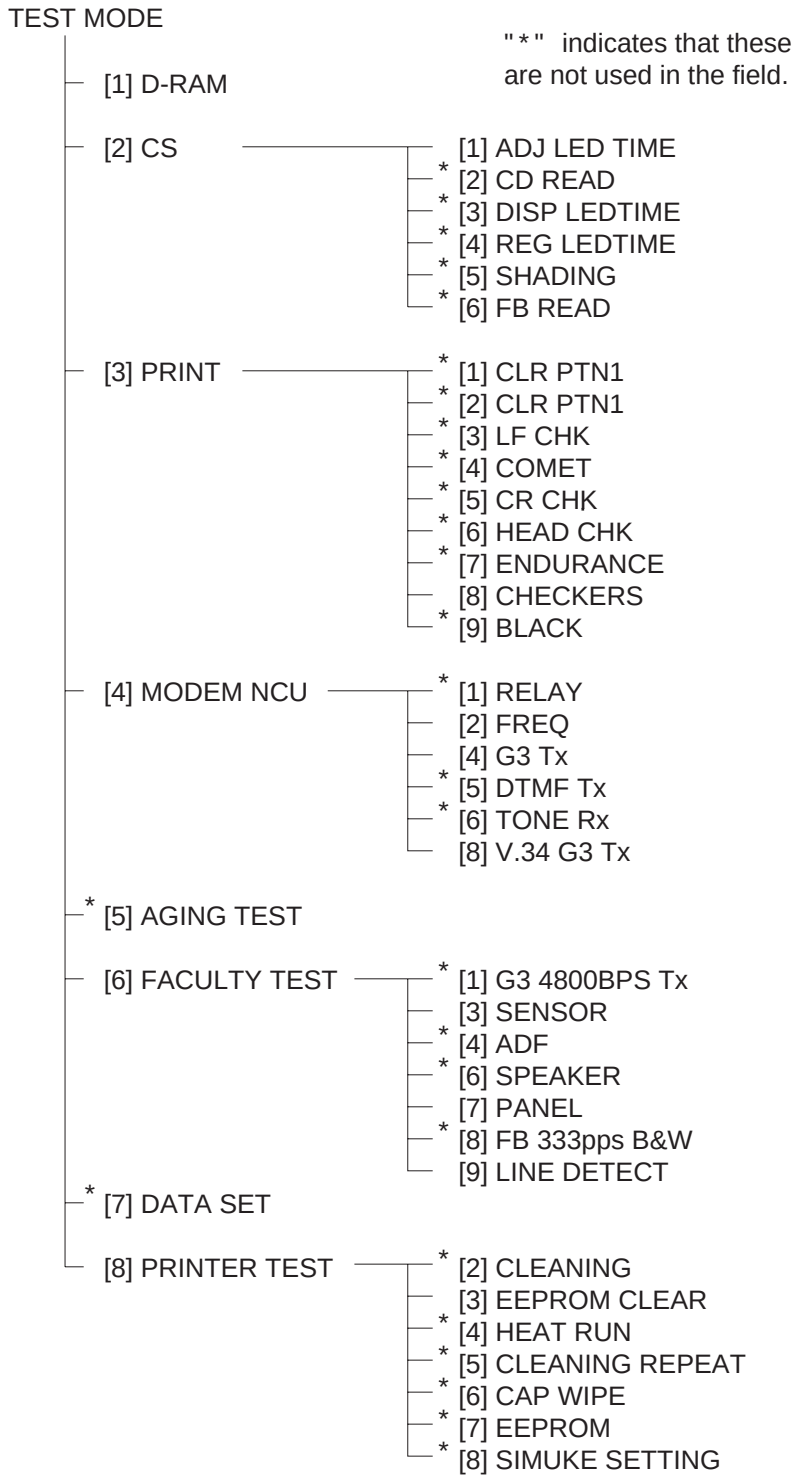



**Figure 4-22 Test Mode Menu**

## 6.2.3 D-RAM tests

Pressing the numeric key *1* from the test mode menu selects the D-RAM tests. D-RAM Test 1 writes data to the entire D-RAM region and reads it out to check that operations are correct. D-RAM Test 2 just reads data at high speed.
Replace the SPCNT board if an error occur.

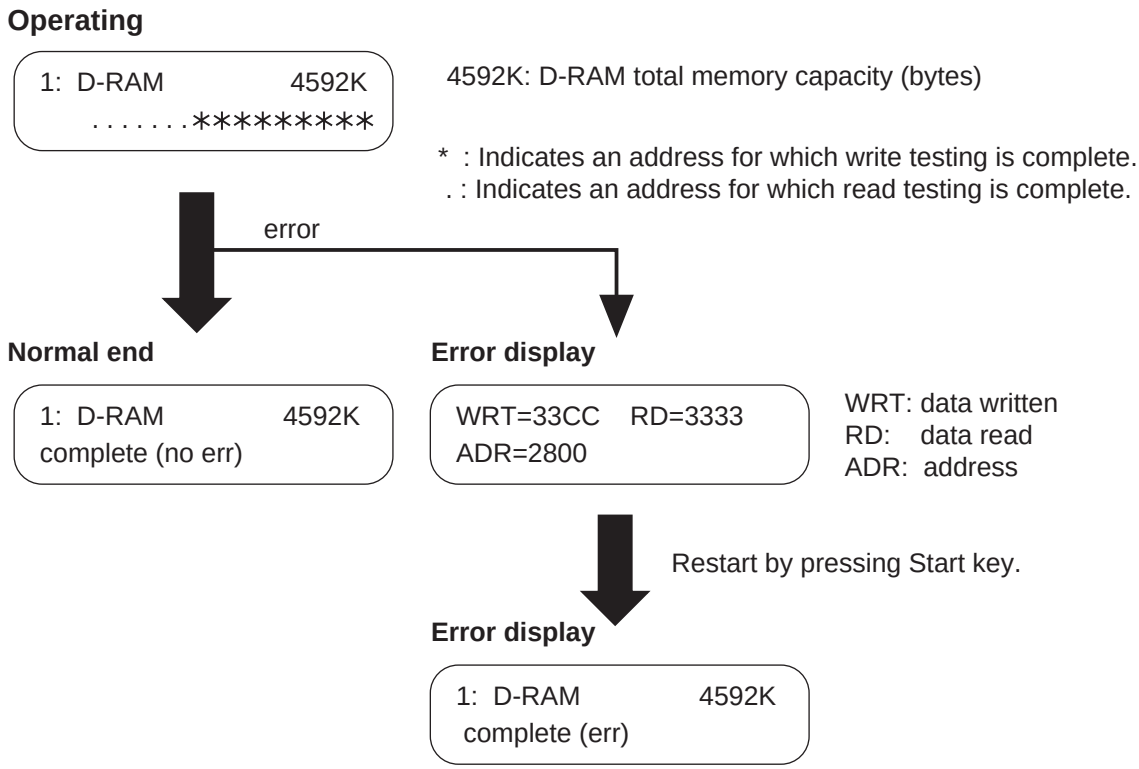



**Figure 4-25 D-RAM Test**

## 6.2.4 CS tests

In Test mode menu, pressing numeric key 2 and select CS test. Then press numeric key 1, and "ADJ LEDTIME" is displayed, where shading data of contact sensor can be registered.

REFERENCE

Details on CS LED lights-on duration adjustment, see this Chapter *3.1 CS LED Lights-on Duration Adjustment.*
Tests [2], [3], [4] and Tests [5] are not used in the field.

## 6.2.5 PRINT test

Pressing the **3** key from the test mode menu selects the print test. This test prints various patterns. For servicing, use the 3-8: CHECKERS pattern (press the **8** key from the print test menu). The other patterns are not to be used since they are for development and factory personnel. End this test by pressing the **Stop/Reset** key.
Check the pattern for the following:

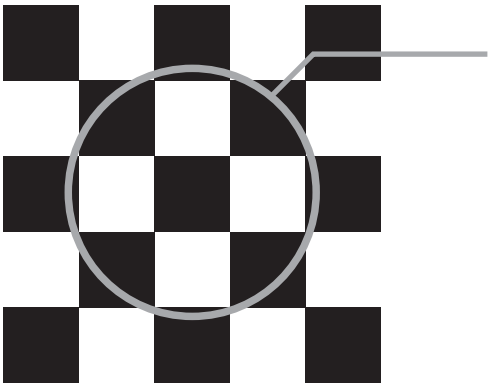

Check for any vertical or horizontal white stripes on the black squares.
Also, check that all the squares have straight edges on all four sides.

**Figure 4-24 Print Test Pattern Check**

**NOTE**

If the print test is normal, make a copy of a document. If the copy is faulty, the reading section is faulty.

Please do not select the following menus:
**3-1: CLR PTN1 3-2: CLR PTN2**
If a mistake is made and these menus are selected, the value of #7 PRINTER #5. INK ABS CAPA will be reset to 0%.
Replace the waste ink absorber and set to 0% in TEST mode.

## 6.2.6 Modem and NCU Tests

The Modem and NCU Test menu is selected by pressing the numeric key 4 from the test mode menu. These tests test modem and NCU transmission and reception. The modem tests check whether signals are sent correctly from the modem by comparing the sound of the signals from the speaker with the sounds from a normal modem. Also, you check on the display whether or not the modem correctly detected received tone signals and DTMF signals.
End this test by pressing the **Stop/Reset** key.

| Modem test type | Overview |
|---|---|
| Frequency test | The modem sends tonal signals from the modular jack and the speaker. |
| G3 signal transmission test | The modem sends G3 signals from the modular jack and the speaker. |
| Tonal signal/DTMF signal reception tests | The modem detects specific frequencies and DTMF signals received from the modular jack. |
| V.34 G3 signal transmission test | The modem sends V.34 G3 signals from the modular jack and the speaker. |

### a) Frequency test

The frequency test menu is selected by pressing the numeric key 2 from the MODEM NCU test menu. Signals of the frequencies below are sent from the modem using the modular jack and the speaker. The frequency can be changed with the numeric keys.

| Numeric key | Frequency |
|---|---|
| 1 | 462 Hz |
| 2 | 1100 Hz |
| 3 | 1300 Hz |
| 4 | 1500 Hz |
| 5 | 1650 Hz |
| 6 | 1850 Hz |
| 7 | 2100 Hz |

**NOTE**

The transmission levels for each frequency follow the service data transmission level settings.

### b) G3 signal transmission test

The G3 signal transmission test menu is selected by pressing the numeric key 4 from the MODEM NCU test menu. The G3 signals below are sent from the modem using the modular jack and the speaker. The frequency can be changed with the numeric key.

| Numeric key | Speed |
|---|---|
| 0 | 300 bps |
| 1 | 2400 bps |
| 2 | 4800 bps |
| 3 | 7200 bps |
| 4 | 9600 bps |
| 5 | TC7200 bps |
| 6 | TC9600 bps |
| 7 | 12000 bps |
| 8 | 14400 bps |

NOTE

The transmission level for each frequency follows the service data.

### d) V.34 G3 signal transmission test

The V.34 G3 signal transmission test menu is selected by pressing the numeric key 8 from the MODEM NCU test menu. The V.34 G3 signals below are sent from the modem using the modular jack and the speaker by pressing the Start key. The Baud rate can be changed with the numeric keys, and the Speed can be changed with the search keys.

| Numeric key | Baud rate |
|---|---|
| 0 | 3429 baud |
| 1 | 3200 baud |
| 2 | 3000 baud |
| 3 | 2800 baud |
| 4 | 2743 baud |
| 5 | 2400 baud |

| Search key | Speed |
|---|---|
| | 33.6 kbps |
| | 31.2 kbps |
| | 28.8 kbps |
| ◄ ► | 26.4 kbps |
| | 24.0 kbps |
| | 21.6 kbps |
| | 19.2 kbps |
| | 16.8 kbps |
| | 14.4 kbps |
| | 12.0 kbps |
| | 9.6 kbps |
| | 7.2 kbps |
| | 4.8 kbps |
| | 2.4 kbps |

NOTE

The transmission level for each frequency follows the service data.

## 6.2.7 Faculty tests

The faculty tests are selected by pressing the numeric key **6** from the test mode menu. These tests test the following faculties of this machine.

| Test type | Overview |
|---|---|
| Sensor tests | Test whether the sensors are operating correctly. |
| Operation panel test | Tests whether the key switches on the control panel are operating correctly. |
| Line signal reception test | Tests whether the NCU board signal sensor and frequency counter are operating correctly. |

### a) Sensor tests

The sensor test is selected by pressing the numeric key **3** from the faculty test menu. In this test, you can check the status of each sensor of this fax in item 1 on the display.
You can also check if sensors that use actuators and microswitches are operating correctly by moving the actuator or microswitch.

NOTE

The sensor tests cannot be used to test all of the sensors. The following sensors cannot be tested with the sensor tests:
**Pickup sensor, and ink sensor.**

If any of these sensor are faulty, an error message or service error code will appear to indicate the faulty sensor.

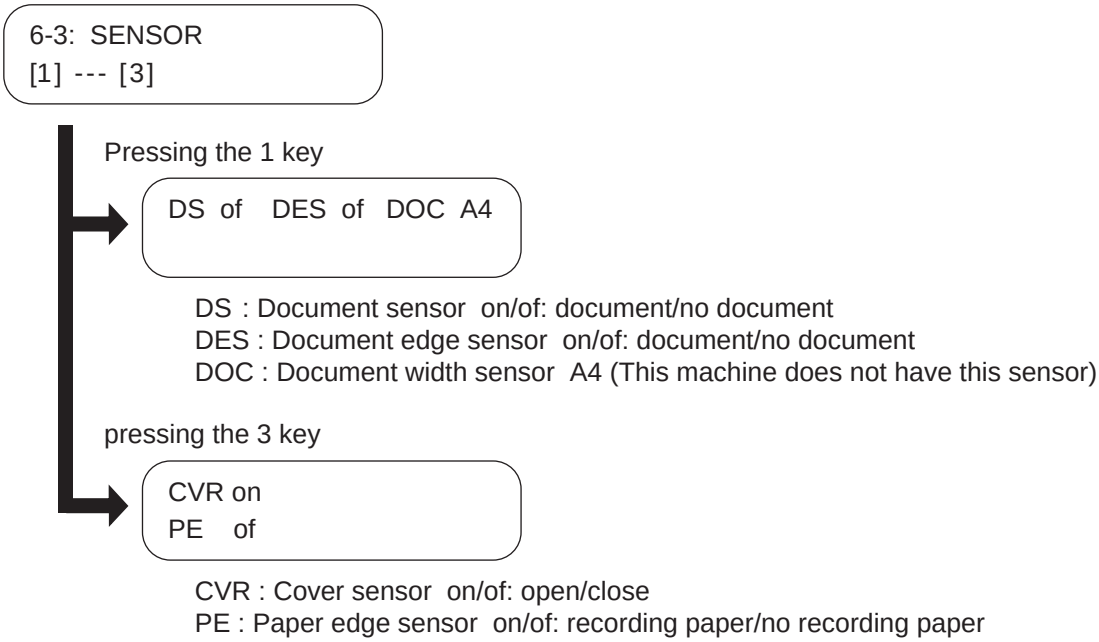

6-3: SENSOR
[1] --- [3]
Pressing the 1 key
DS of DES of DOC A4
DS : Document sensor on/of: document/no document
DES : Document edge sensor on/of: document/no document
DOC : Document width sensor A4 (This machine does not have this sensor)
pressing the 3 key
CVR on
PE of
CVR : Cover sensor on/of: open/close
PE : Paper edge sensor on/of: recording paper/no recording paper

**Figure 4-25 Sensor Tests**

### b) Operation panel tests

The operation panel test is selected by pressing the numeric key **7** from the faculty test menu. In this test, check that the display, LED lamps, and keys on the control panel are operating correctly.

#### b-1) Display test

If you press **Start** key in the menu of the operation panel, 20 letters of "H" are displayed in two lines. If you press **Start** key one more time, all the LCD dots are displayed. If you press **Start** key once again, "_" is displayed. Verify that there are no LCD dots which fail to be displayed by performing this operation.

#### b-2) LED lamp test

The LED lamp test is selected by pressing the **Start** key after the display test.
When the **Start** key is pressed, all the lamps on the control panel light. Check for any LED that does not light during the test.

#### b-3) Operation key test

The Operation key test is selected by pressing the **Start** key after the LED lamp test.
In this test, you press the key corresponding to the displayed character to put it out. The table giving the correspondence between the characters and the keys is below.

| Character | Operation key | Character | Operation key |
|---|---|---|---|
| 1-# | Numeric keys | F | Fax key(MP730 only) |
| U | Resume key | N | Scan key |
| M | Menu key | H | Photo key |
| - | ◀ key | L | Color key |
| S | Set key | B | B&W key |
| + | ▶ key | R | Redial/Pause key(MP730 only) |
| Z | Enlarge/Reduce key | D | Coded Dial key(MP730 only) |
| P | Paper select key | O | Hook key(MP730 only) |
| E | Contrast key | W | ON/OFF key |
| I | Image Quality key | | |
| C | Copy key | | |

#### b-4) One-touch speed dial test (MP730 only)

When all the characters displayed have gone out, the system next starts the one-touch speed dialing key test. The letters a-j are displayed on the display, corresponding to one-touch speed dialing keys 01-10. Each letter displayed on the display goes out when its corresponding one-touch speed dialing key is pressed.
In this test, check for operation keys whose corresponding character or letter does not go out when the key is pressed.

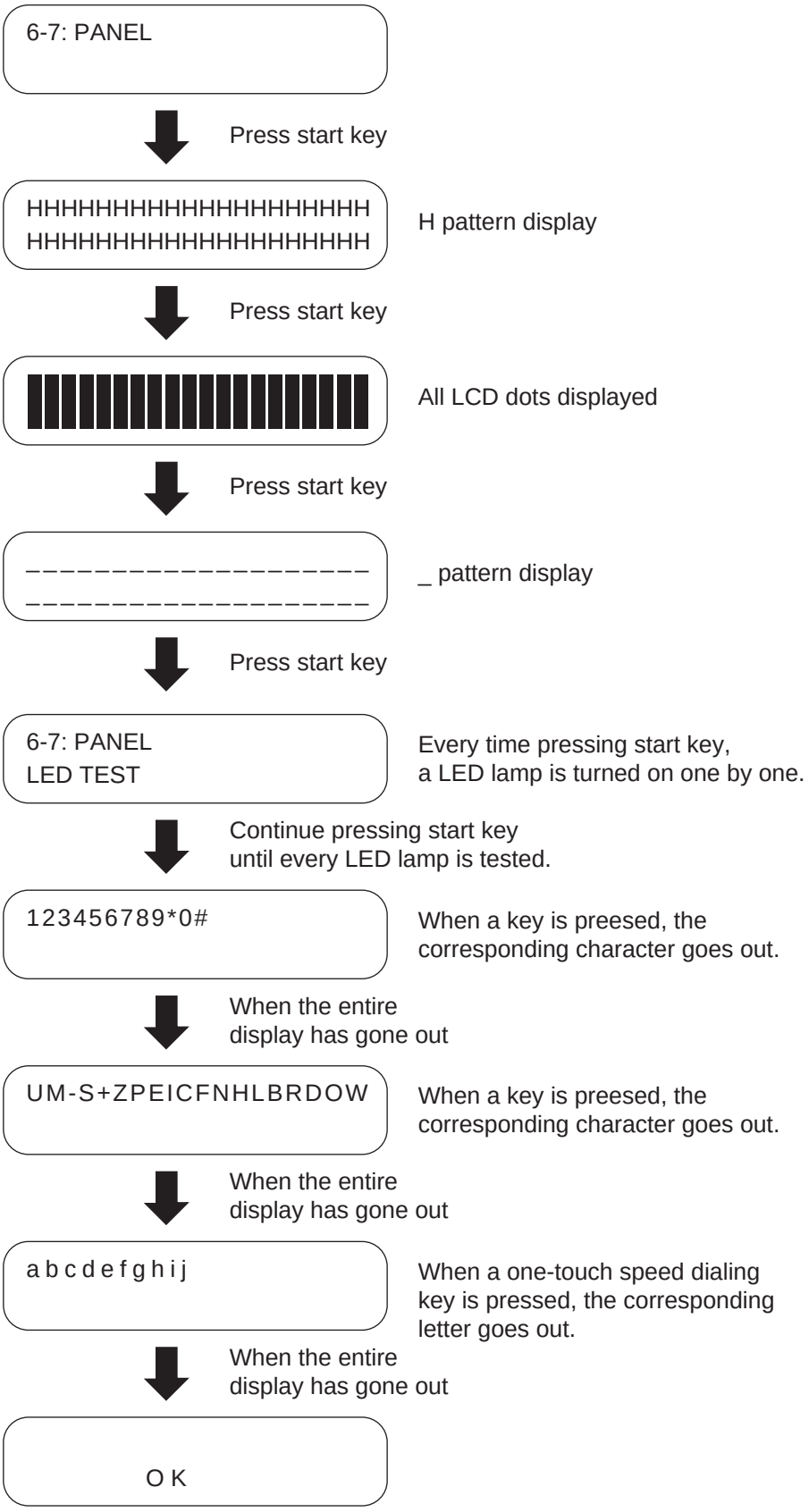



**Figure 4-26 Operation Panel**

### c) Line signal reception test

The line detect test menu is selected by pressing the numeric key **9** from the faculty test menu. This test checks the operation of the NCU signal sensor and frequency counter. In Menu 1, the CI, status can be detected and in Menu 2 the frequency can be detected at changing detection levels.

#### c-1) Test Menu 1

Test Menu 1 is selected by pressing the numeric key **1** from the Line Detect menu. When CI, and CNG are detected from the modular jack, the display changes from OFF to ON and the received frequency is displayed.

#### c-2) Test Menu 2

Test Menu 2 is selected by pressing the numeric key **2** from the Line Detect menu. When a tonal frequency is detected from the modular jack, the display changes from OFF to ON and the received frequency is displayed. The frequency detection level can be set with the numeric keys.

| Numeric key | Detection level (dBm) |
|---|---|
| 0 | –26 |
| 1 | –30 |
| 2 | –32 |
| 3 | –35 |
| 4 | –38 |
| 5 | –41 |
| 6 | –43 |
| 7 | –45 |
| 8 | –47 |
| 9 | –51 |

#### c-3) Test Menu 3

Test Menu 3 is selected by pressing the numeric key **3** from the Line Detect menu. When CNG is detected from the modular jack, the display changes from OFF to ON.

## 6.2.8 PRINTER tests

PRINTER Test is selected by pressing the numeric key 8 from the Test mode menu. After that, EEPROM CLEAR category is selected by pressing the numeric key 3, or waste ink capacity is reset by pressing the numeric key 0.

**NOTE**

Be sure to reset waste ink capacity only when replacing the waste ink absorbing material to new one. If waste ink capacity is reset in other situations, it results in faulty count.

# 7. SERVICE REPORT

## 7.1 Report Output Function

### 7.1.1 User report output functions

The machine can output user reports manually by user operation, or automatically, according to user data settings.

#### a) Manual output of reports by user operation

| Report type | Operations |
|---|---|
| 1-touch list<br>Coded dial list<br>Group dial list<br>Access code list<br>Dept. info list<br>User's data list<br>Sender name list<br>Activity report<br>Document memory list | Press Fax key, press the Menu key select the REPORTS/ LIST using the ◀▶ key. Press the Set key. Using the ◀▶ key, select the type of report to generate, and press the Set key. |

#### b) Reports output automatically by user data registration

Each report written below can be automatically output by specifying "REPORT SETTINGS" in user data registration.

Transmission report
Reception report
Memory box report

**REFERENCE**

For samples of user reports, see the *User's Guide*.

**NOTE**

ROM Version display
The ROM version is printed on the top left hand side of the User's data list. Please refer to this when troubleshooting.
example:

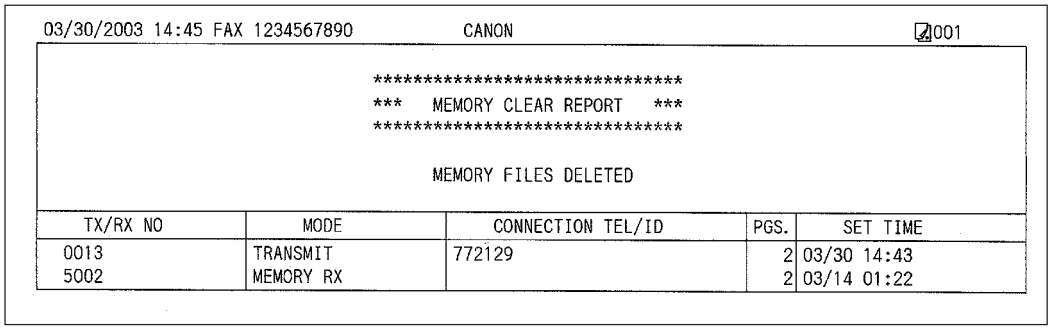
WLD XX-XX /X.XX

- /X.XX — Printer ROM version
- WLD XX-XX — MAIN-ROM-version

### c) Reports output automatically

#### Memory clear report

The machine automatically outputs a memory clear report when the power is turned on after a power cut.



03/30/2003 14:45 FAX 1234567890 CANON 001

**********************************
*** MEMORY CLEAR REPORT ***
**********************************

MEMORY FILES DELETED

| TX/RX NO | MODE | CONNECTION TEL/ID | PGS. | SET TIME |
|---|---|---|---|---|
| 0013 | TRANSMIT | 772129 | 2 | 03/30 14:43 |
| 5002 | MEMORY RX | | 2 | 03/14 01:22 |

**Figure 4-27 Memory Clear Report**

| | |
|---|---|
| TX/RX NO | : Indicates four digits of the transaction number |
| MODE | : Indicates, TRANSMIT, MEMORY RX etc. |
| CONNECTION TEL/ID | : Number sent from the other party or number dialled |
| PGS. | : Number of pages are stored in memory |
| SET TIME | : Time when data is stored in memory |

## 7.1.2 Service report output functions

This fax outputs the service data setting status, past communications history reports, detailed error information reports, etc. in service mode.

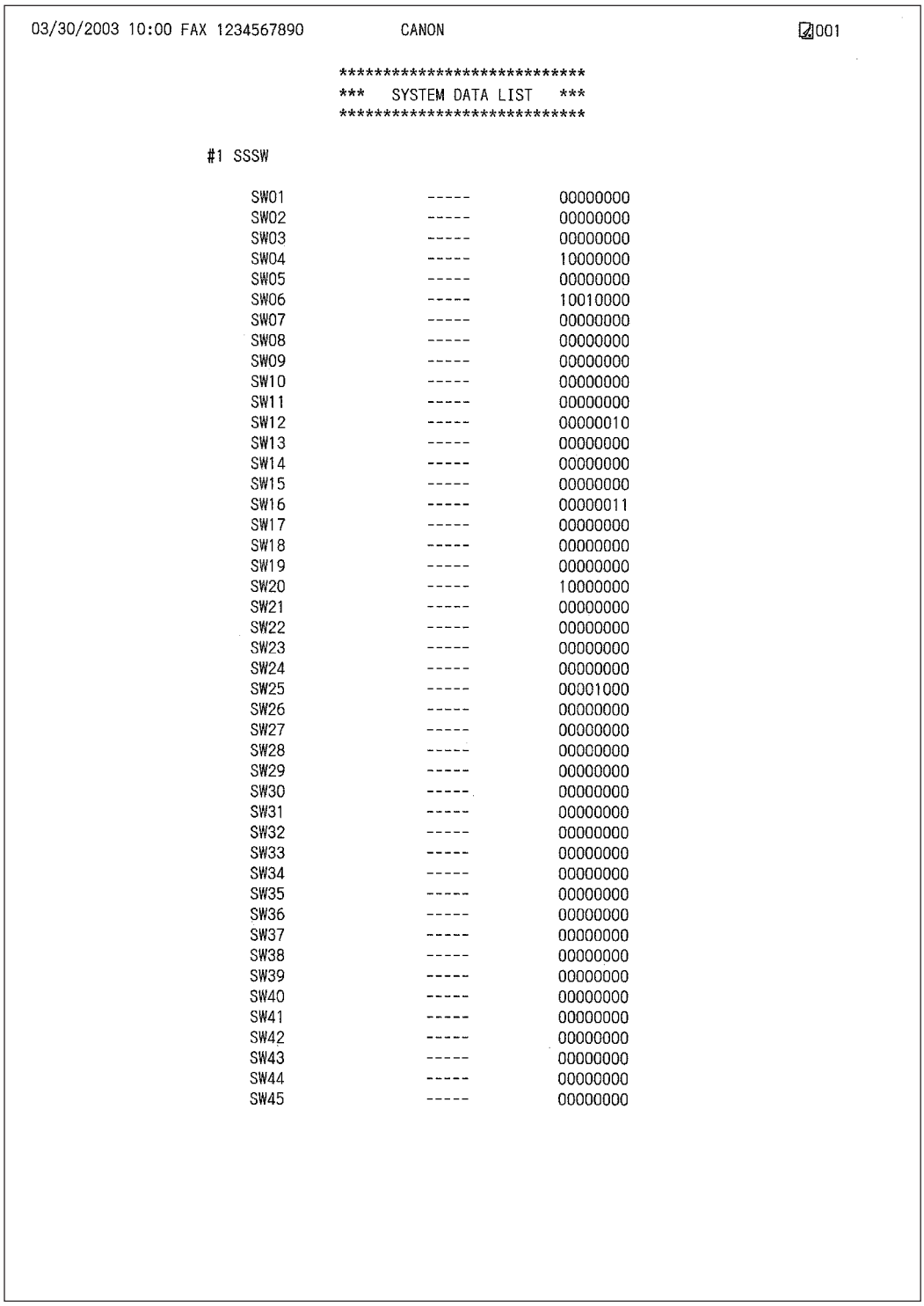
### a) List of service reports

This fax outputs the service reports shown below.

| Report type | Operations |
|---|---|
| Service data list<br>System dump list | In the service mode, and select SERVICE REPORTS using the ◀▶ key. Press the Set key; then ,select the type of list to generate using the ◀▶ key. |
| Transmission report (with service error code and dump list) | If you set bits 0 and 1 of #1 SSSW SW01 in the service mode, the service error code and dump list are indicated on the activity report. |
| Reception report (with service error code and dump list) | If you set bits 0 and 1 of #1 SSSW SW01 in the service mode, the service error code and dump list are indicated on the activity report. |

### a-1) System data list

This list shows service data #1~#5, #7, #9 setting statuses.
The following is a sample list.



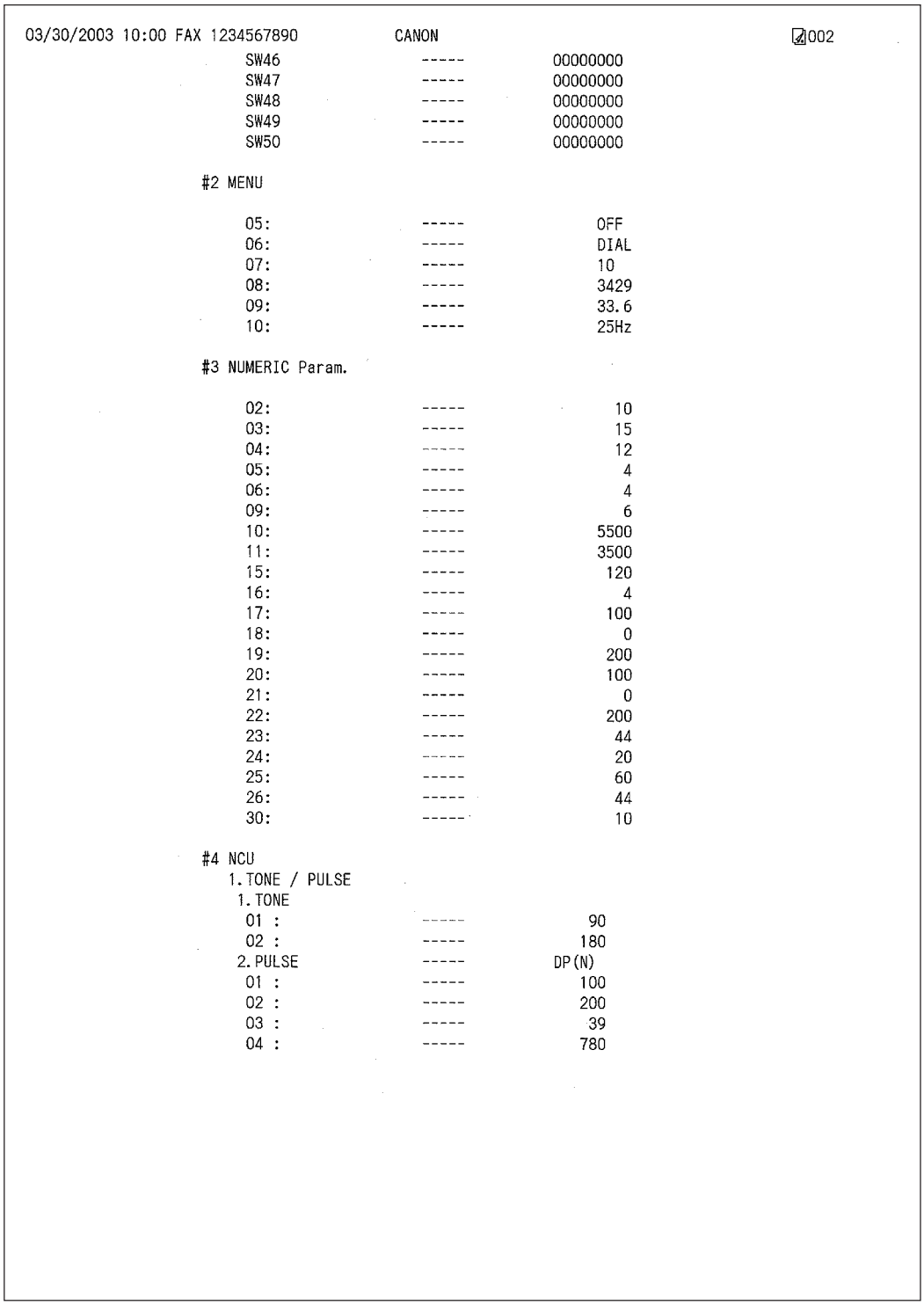
03/30/2003 10:00 FAX 1234567890 CANON ☑001

******************************
*** SYSTEM DATA LIST ***
******************************

#1 SSSW

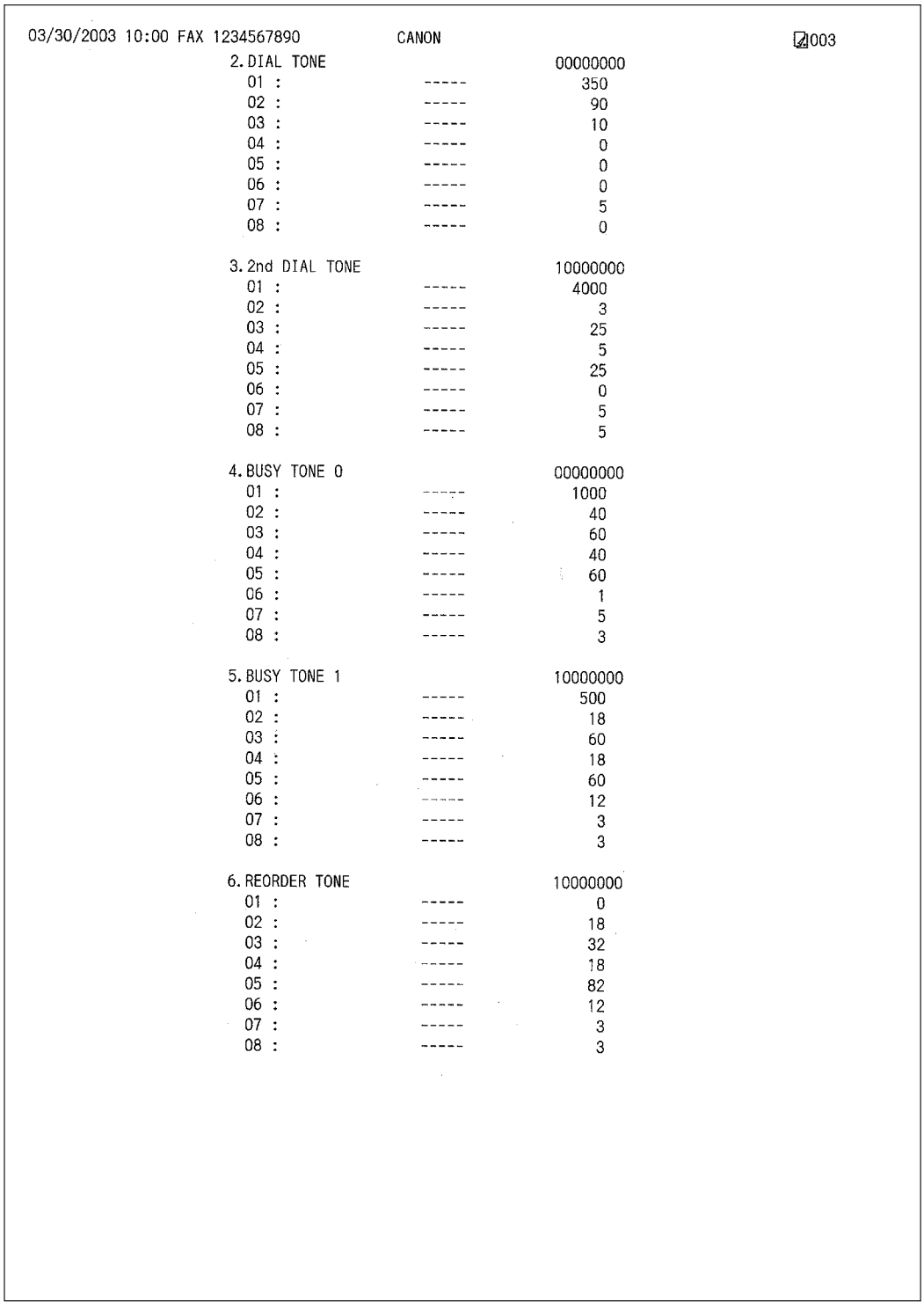
| | | |
|---|---|---|
| SW01 | ----- | 00000000 |
| SW02 | ----- | 00000000 |
| SW03 | ----- | 00000000 |
| SW04 | ----- | 10000000 |
| SW05 | ----- | 00000000 |
| SW06 | ----- | 10010000 |
| SW07 | ----- | 00000000 |
| SW08 | ----- | 00000000 |
| SW09 | ----- | 00000000 |
| SW10 | ----- | 00000000 |
| SW11 | ----- | 00000000 |
| SW12 | ----- | 00000010 |
| SW13 | ----- | 00000000 |
| SW14 | ----- | 00000000 |
| SW15 | ----- | 00000000 |
| SW16 | ----- | 00000011 |
| SW17 | ----- | 00000000 |
| SW18 | ----- | 00000000 |
| SW19 | ----- | 00000000 |
| SW20 | ----- | 10000000 |
| SW21 | ----- | 00000000 |
| SW22 | ----- | 00000000 |
| SW23 | ----- | 00000000 |
| SW24 | ----- | 00000000 |
| SW25 | ----- | 00001000 |
| SW26 | ----- | 00000000 |
| SW27 | ----- | 00000000 |
| SW28 | ----- | 00000000 |
| SW29 | ----- | 00000000 |
| SW30 | ----- | 00000000 |
| SW31 | ----- | 00000000 |
| SW32 | ----- | 00000000 |
| SW33 | ----- | 00000000 |
| SW34 | ----- | 00000000 |
| SW35 | ----- | 00000000 |
| SW36 | ----- | 00000000 |
| SW37 | ----- | 00000000 |
| SW38 | ----- | 00000000 |
| SW39 | ----- | 00000000 |
| SW40 | ----- | 00000000 |
| SW41 | ----- | 00000000 |
| SW42 | ----- | 00000000 |
| SW43 | ----- | 00000000 |
| SW44 | ----- | 00000000 |
| SW45 | ----- | 00000000 |

**Figure 4-28 System Data List (1/8)**



```
03/30/2003 10:00 FAX 1234567890          CANON                                  002
                    SW46                 -----          00000000
                    SW47                 -----          00000000
                    SW48                 -----          00000000
                    SW49                 -----          00000000
                    SW50                 -----          00000000

                #2 MENU

                    05:                  -----              OFF
                    06:                  -----              DIAL
                    07:                  -----              10
                    08:                  -----              3429
                    09:                  -----              33.6
                    10:                  -----              25Hz

                #3 NUMERIC Param.

                    02:                  -----               10
                    03:                  -----               15
                    04:                  -----               12
                    05:                  -----                4
                    06:                  -----                4
                    09:                  -----                6
                    10:                  -----             5500
                    11:                  -----             3500
                    15:                  -----              120
                    16:                  -----                4
                    17:                  -----              100
                    18:                  -----                0
                    19:                  -----              200
                    20:                  -----              100
                    21:                  -----                0
                    22:                  -----              200
                    23:                  -----               44
                    24:                  -----               20
                    25:                  -----               60
                    26:                  -----               44
                    30:                  -----               10

                #4 NCU
                   1.TONE / PULSE
                    1.TONE
                     01 :                -----               90
                     02 :                -----              180
                    2.PULSE              -----            DP(N)
                     01 :                -----              100
                     02 :                -----              200
                     03 :                -----               39
                     04 :                -----              780
```

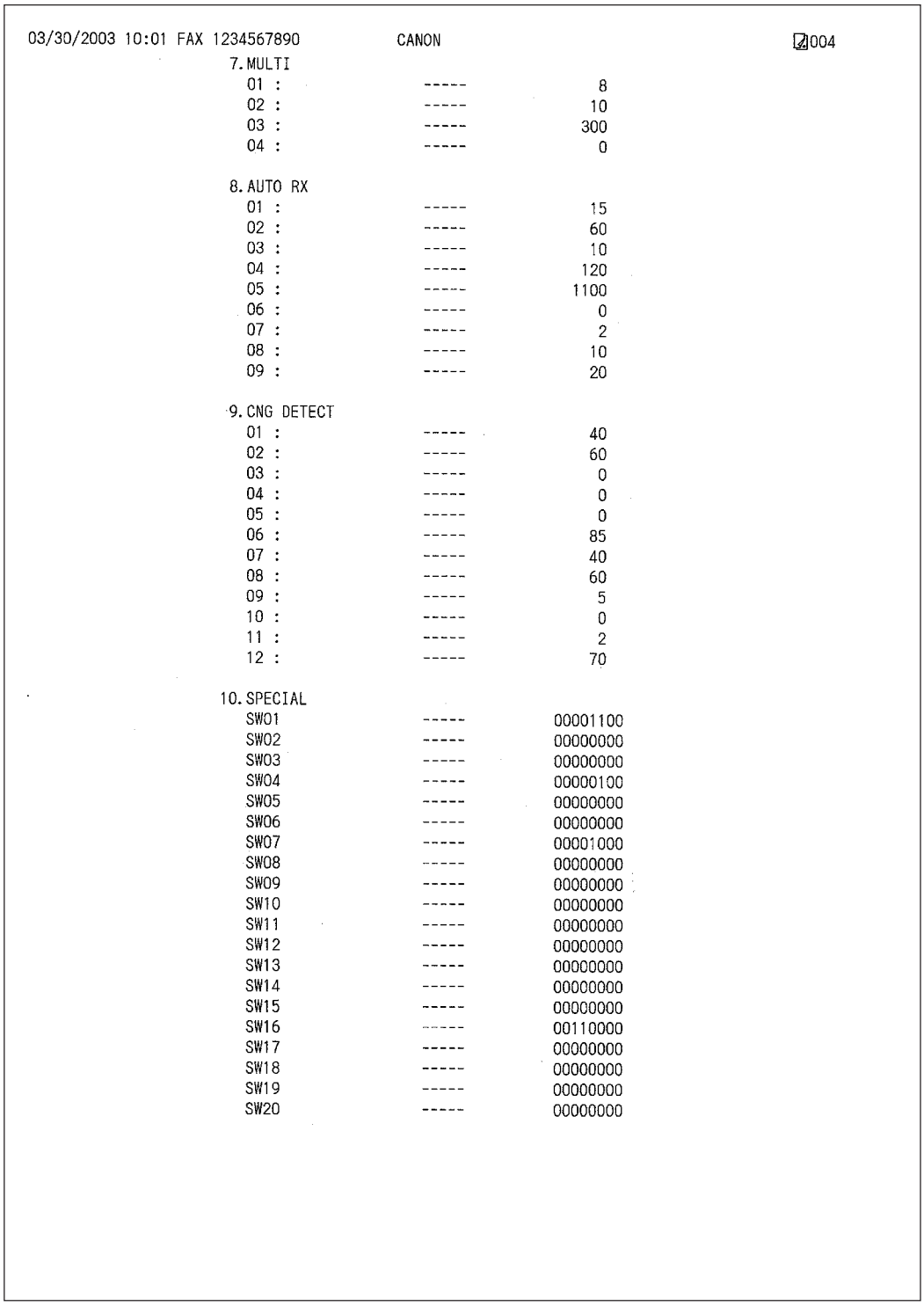
**Figure 4-29 System Data List (2/8)**



03/30/2003 10:00 FAX 1234567890 CANON ☑003

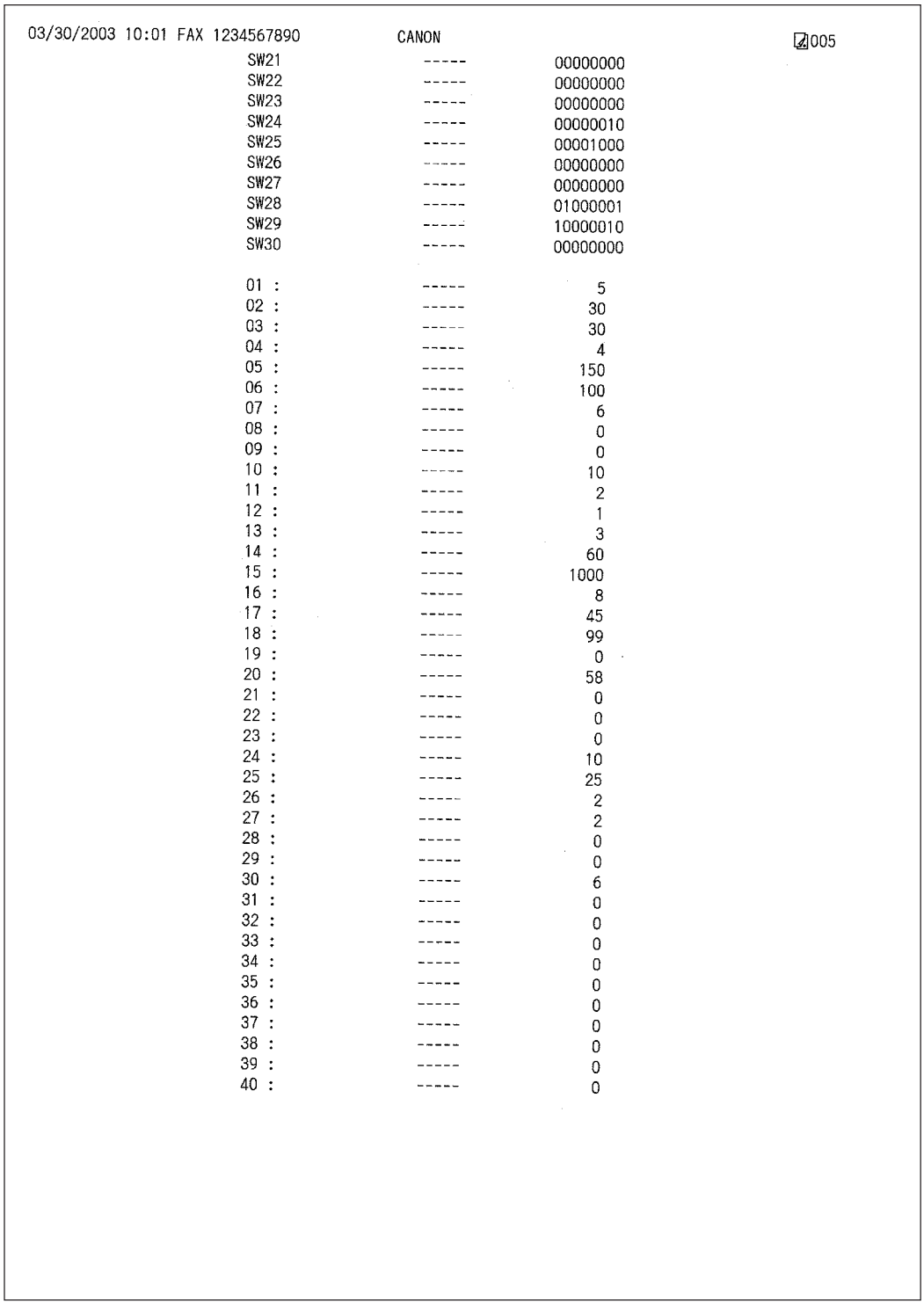
| | | |
|---|---|---|
| 2. DIAL TONE | | 00000000 |
| 01 : | ----- | 350 |
| 02 : | ----- | 90 |
| 03 : | ----- | 10 |
| 04 : | ----- | 0 |
| 05 : | ----- | 0 |
| 06 : | ----- | 0 |
| 07 : | ----- | 5 |
| 08 : | ----- | 0 |
| 3. 2nd DIAL TONE | | 10000000 |
| 01 : | ----- | 4000 |
| 02 : | ----- | 3 |
| 03 : | ----- | 25 |
| 04 : | ----- | 5 |
| 05 : | ----- | 25 |
| 06 : | ----- | 0 |
| 07 : | ----- | 5 |
| 08 : | ----- | 5 |
| 4. BUSY TONE 0 | | 00000000 |
| 01 : | ----- | 1000 |
| 02 : | ----- | 40 |
| 03 : | ----- | 60 |
| 04 : | ----- | 40 |
| 05 : | ----- | 60 |
| 06 : | ----- | 1 |
| 07 : | ----- | 5 |
| 08 : | ----- | 3 |
| 5. BUSY TONE 1 | | 10000000 |
| 01 : | ----- | 500 |
| 02 : | ----- | 18 |
| 03 : | ----- | 60 |
| 04 : | ----- | 18 |
| 05 : | ----- | 60 |
| 06 : | ----- | 12 |
| 07 : | ----- | 3 |
| 08 : | ----- | 3 |
| 6. REORDER TONE | | 10000000 |
| 01 : | ----- | 0 |
| 02 : | ----- | 18 |
| 03 : | ----- | 32 |
| 04 : | ----- | 18 |
| 05 : | ----- | 82 |
| 06 : | ----- | 12 |
| 07 : | ----- | 3 |
| 08 : | ----- | 3 |

**Figure 4-30 System Data List (3/8)**



```
03/30/2003 10:01 FAX 1234567890          CANON                          004
                7. MULTI
                   01 :                  -----                          8
                   02 :                  -----                          10
                   03 :                  -----                          300
                   04 :                  -----                          0

                8. AUTO RX
                   01 :                  -----                          15
                   02 :                  -----                          60
                   03 :                  -----                          10
                   04 :                  -----                          120
                   05 :                  -----                          1100
                   06 :                  -----                          0
                   07 :                  -----                          2
                   08 :                  -----                          10
                   09 :                  -----                          20

                9. CNG DETECT
                   01 :                  -----                          40
                   02 :                  -----                          60
                   03 :                  -----                          0
                   04 :                  -----                          0
                   05 :                  -----                          0
                   06 :                  -----                          85
                   07 :                  -----                          40
                   08 :                  -----                          60
                   09 :                  -----                          5
                   10 :                  -----                          0
                   11 :                  -----                          2
                   12 :                  -----                          70

                10. SPECIAL
                   SW01                  -----                          00001100
                   SW02                  -----                          00000000
                   SW03                  -----                          00000000
                   SW04                  -----                          00000100
                   SW05                  -----                          00000000
                   SW06                  -----                          00000000
                   SW07                  -----                          00001000
                   SW08                  -----                          00000000
                   SW09                  -----                          00000000
                   SW10                  -----                          00000000
                   SW11                  -----                          00000000
                   SW12                  -----                          00000000
                   SW13                  -----                          00000000
                   SW14                  -----                          00000000
                   SW15                  -----                          00000000
                   SW16                  -----                          00110000
                   SW17                  -----                          00000000
                   SW18                  -----                          00000000
                   SW19                  -----                          00000000
                   SW20                  -----                          00000000
```

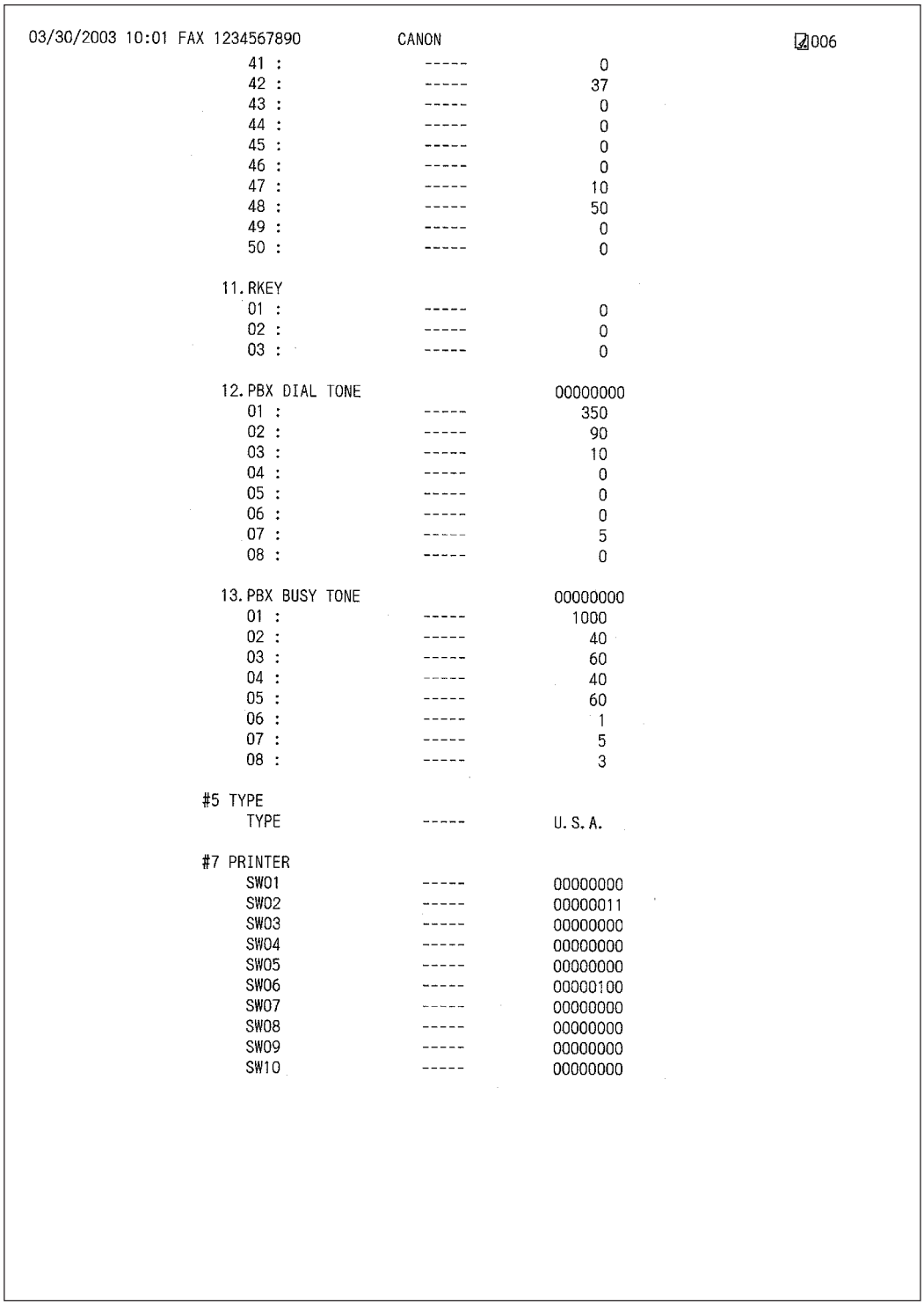
**Figure 4-31 System Data List (4/8)**



03/30/2003 10:01 FAX 1234567890 CANON ☑005

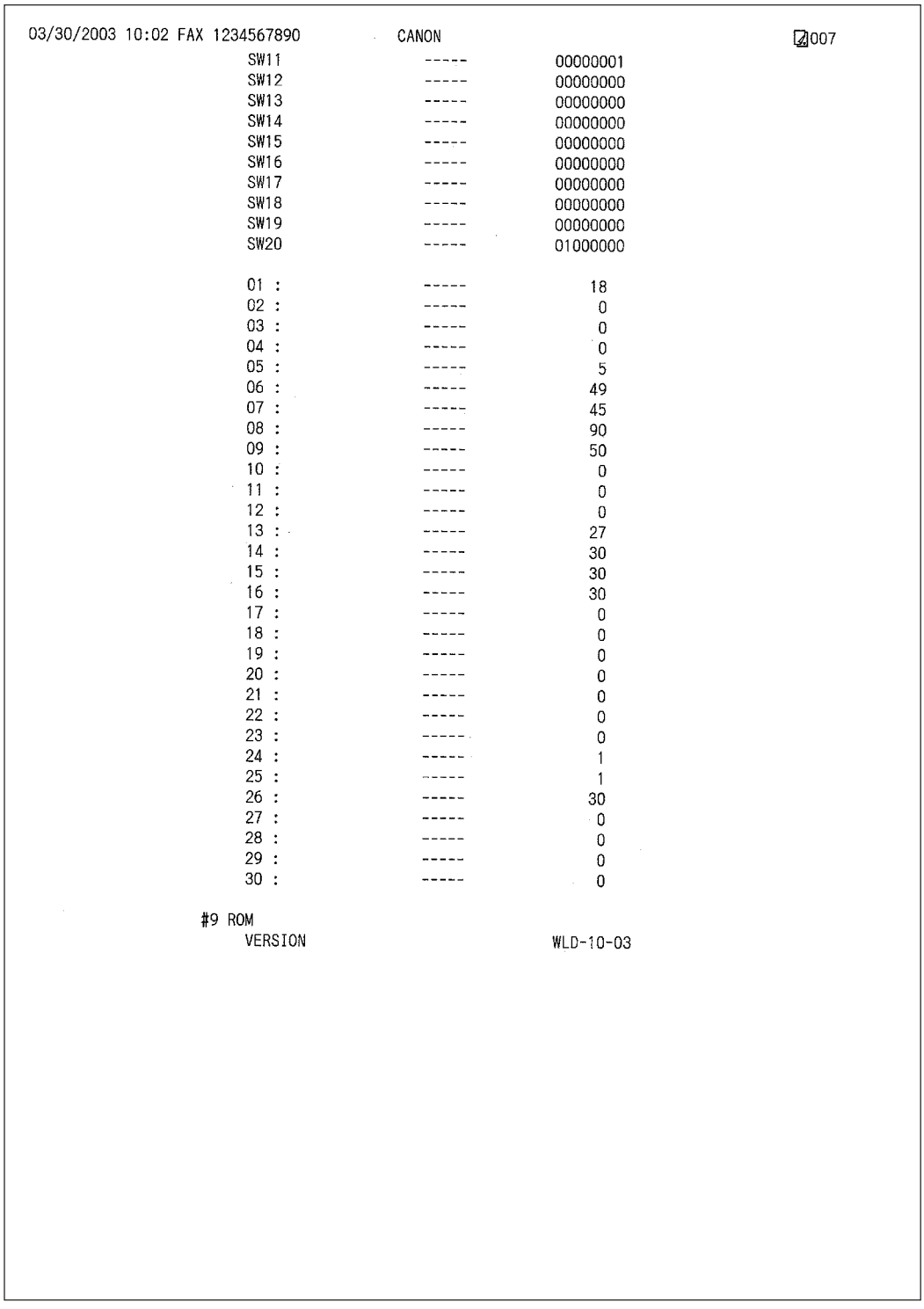
| | | |
|---|---|---|
| SW21 | ----- | 00000000 |
| SW22 | ----- | 00000000 |
| SW23 | ----- | 00000000 |
| SW24 | ----- | 00000010 |
| SW25 | ----- | 00001000 |
| SW26 | ----- | 00000000 |
| SW27 | ----- | 00000000 |
| SW28 | ----- | 01000001 |
| SW29 | ----- | 10000010 |
| SW30 | ----- | 00000000 |
| 01 : | ----- | 5 |
| 02 : | ----- | 30 |
| 03 : | ----- | 30 |
| 04 : | ----- | 4 |
| 05 : | ----- | 150 |
| 06 : | ----- | 100 |
| 07 : | ----- | 6 |
| 08 : | ----- | 0 |
| 09 : | ----- | 0 |
| 10 : | ----- | 10 |
| 11 : | ----- | 2 |
| 12 : | ----- | 1 |
| 13 : | ----- | 3 |
| 14 : | ----- | 60 |
| 15 : | ----- | 1000 |
| 16 : | ----- | 8 |
| 17 : | ----- | 45 |
| 18 : | ----- | 99 |
| 19 : | ----- | 0 |
| 20 : | ----- | 58 |
| 21 : | ----- | 0 |
| 22 : | ----- | 0 |
| 23 : | ----- | 0 |
| 24 : | ----- | 10 |
| 25 : | ----- | 25 |
| 26 : | ----- | 2 |
| 27 : | ----- | 2 |
| 28 : | ----- | 0 |
| 29 : | ----- | 0 |
| 30 : | ----- | 6 |
| 31 : | ----- | 0 |
| 32 : | ----- | 0 |
| 33 : | ----- | 0 |
| 34 : | ----- | 0 |
| 35 : | ----- | 0 |
| 36 : | ----- | 0 |
| 37 : | ----- | 0 |
| 38 : | ----- | 0 |
| 39 : | ----- | 0 |
| 40 : | ----- | 0 |

**Figure 4-32 System Data List (5/8)**



```
03/30/2003 10:01 FAX 1234567890          CANON                          006
                41 :                -----              0
                42 :                -----             37
                43 :                -----              0
                44 :                -----              0
                45 :                -----              0
                46 :                -----              0
                47 :                -----             10
                48 :                -----             50
                49 :                -----              0
                50 :                -----              0

             11.RKEY
                01 :                -----              0
                02 :                -----              0
                03 :                -----              0

             12.PBX DIAL TONE                     00000000
                01 :                -----            350
                02 :                -----             90
                03 :                -----             10
                04 :                -----              0
                05 :                -----              0
                06 :                -----              0
                07 :                -----              5
                08 :                -----              0

             13.PBX BUSY TONE                     00000000
                01 :                -----           1000
                02 :                -----             40
                03 :                -----             60
                04 :                -----             40
                05 :                -----             60
                06 :                -----              1
                07 :                -----              5
                08 :                -----              3

          #5 TYPE
                TYPE                -----        U.S.A.

          #7 PRINTER
                SW01                -----        00000000
                SW02                -----        00000011
                SW03                -----        00000000
                SW04                -----        00000000
                SW05                -----        00000000
                SW06                -----        00000100
                SW07                -----        00000000
                SW08                -----        00000000
                SW09                -----        00000000
                SW10                -----        00000000
```

**Figure 4-33 System Data List (6/8)**



03/30/2003 10:02 FAX 1234567890 CANON ☑007

| | | |
|---|---|---|
| SW11 | ----- | 00000001 |
| SW12 | ----- | 00000000 |
| SW13 | ----- | 00000000 |
| SW14 | ----- | 00000000 |
| SW15 | ----- | 00000000 |
| SW16 | ----- | 00000000 |
| SW17 | ----- | 00000000 |
| SW18 | ----- | 00000000 |
| SW19 | ----- | 00000000 |
| SW20 | ----- | 01000000 |
| 01 : | ----- | 18 |
| 02 : | ----- | 0 |
| 03 : | ----- | 0 |
| 04 : | ----- | 0 |
| 05 : | ----- | 5 |
| 06 : | ----- | 49 |
| 07 : | ----- | 45 |
| 08 : | ----- | 90 |
| 09 : | ----- | 50 |
| 10 : | ----- | 0 |
| 11 : | ----- | 0 |
| 12 : | ----- | 0 |
| 13 : | ----- | 27 |
| 14 : | ----- | 30 |
| 15 : | ----- | 30 |
| 16 : | ----- | 30 |
| 17 : | ----- | 0 |
| 18 : | ----- | 0 |
| 19 : | ----- | 0 |
| 20 : | ----- | 0 |
| 21 : | ----- | 0 |
| 22 : | ----- | 0 |
| 23 : | ----- | 0 |
| 24 : | ----- | 1 |
| 25 : | ----- | 1 |
| 26 : | ----- | 30 |
| 27 : | ----- | 0 |
| 28 : | ----- | 0 |
| 29 : | ----- | 0 |
| 30 : | ----- | 0 |

#9 ROM

| | |
|---|---|
| VERSION | WLD-10-03 |

**Figure 4-34 System Data List (7/8)**

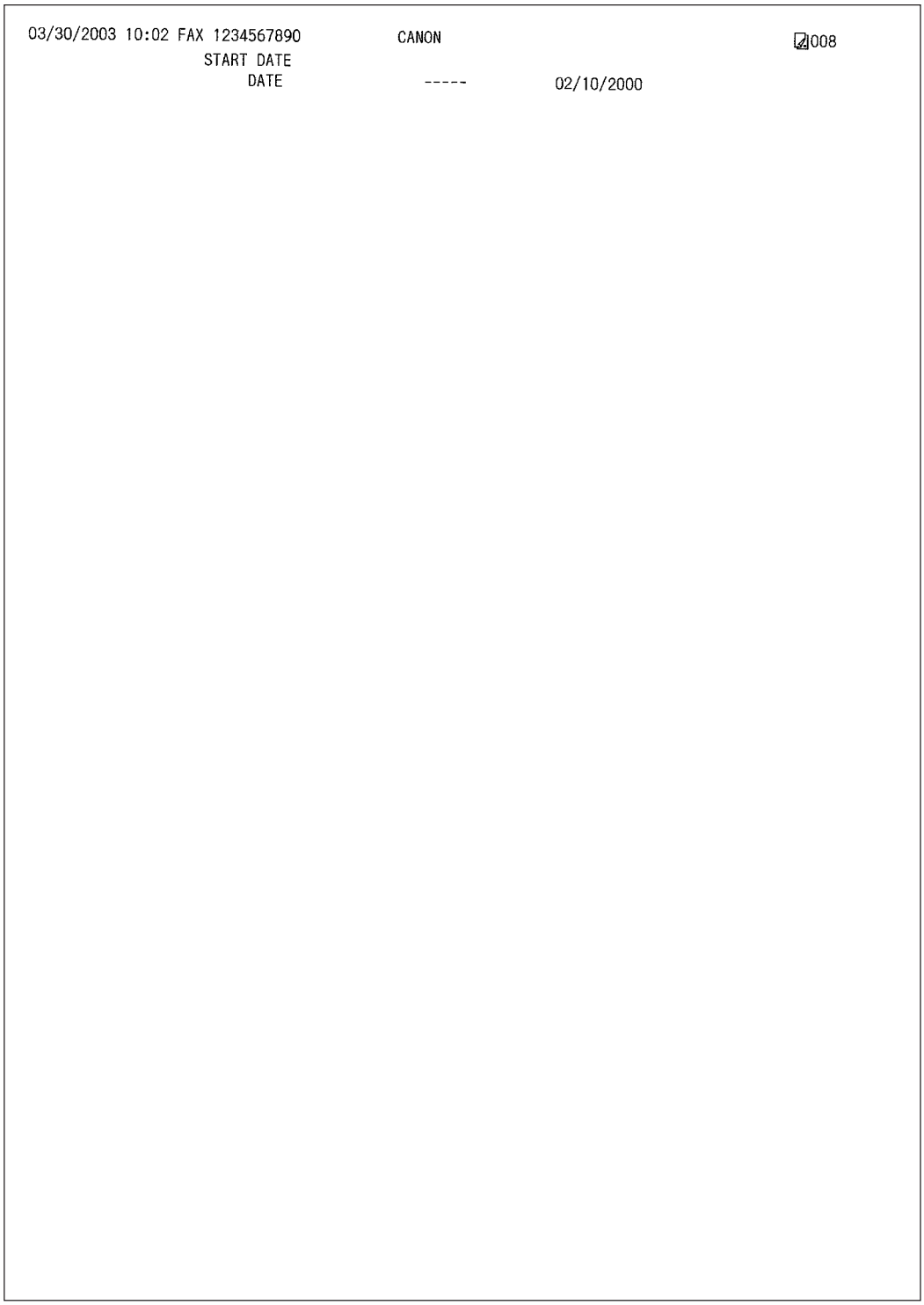
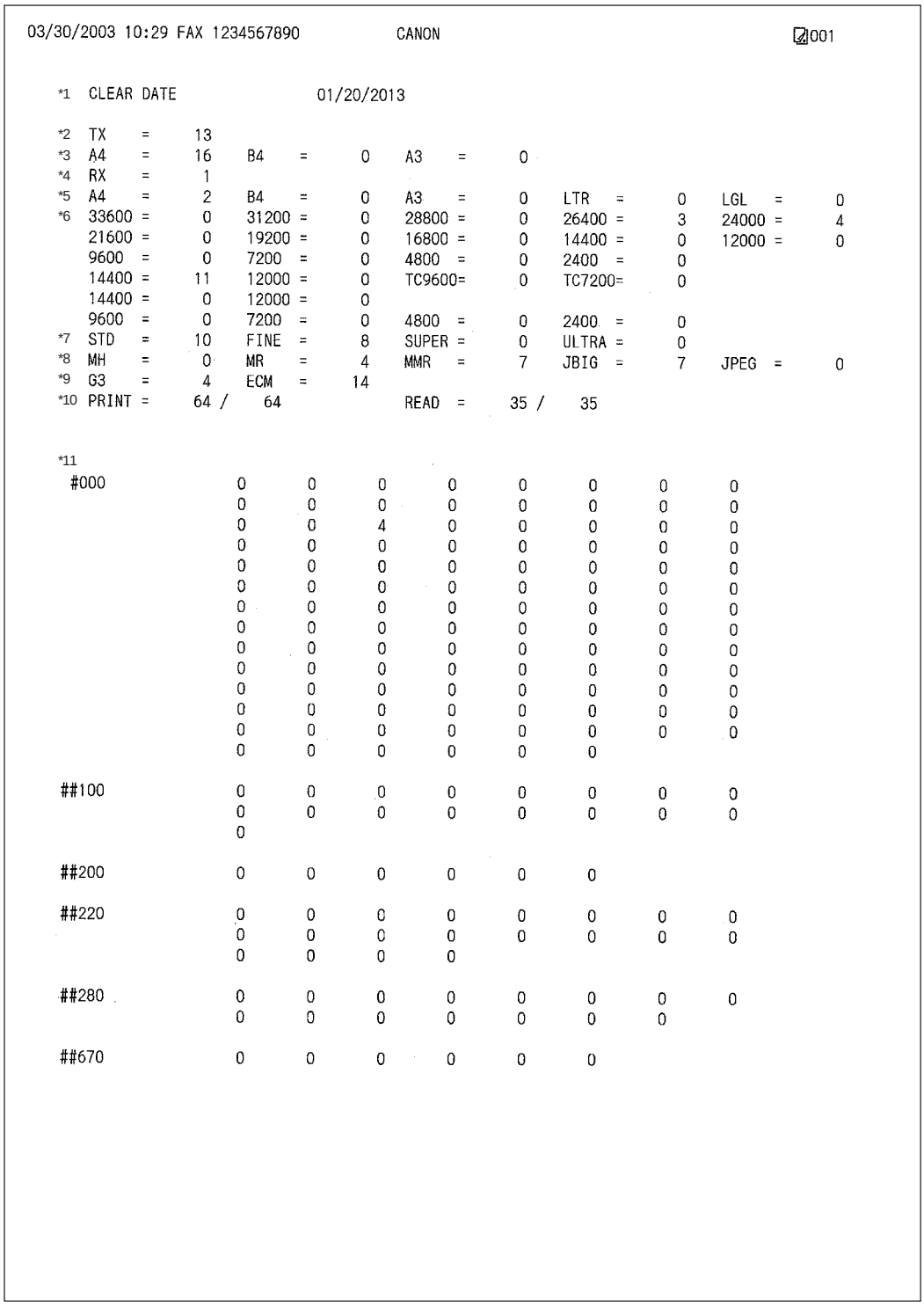



**Figure 4-35 System Data List (8/8)**

NOTE

"START DATE" records the date when the fax performs its first transmission, after shipment from the factory.

## a-2) System dump list



03/30/2003 10:29 FAX 1234567890 CANON ☑001

*1 CLEAR DATE 01/20/2013

*2 TX = 13
*3 A4 = 16 B4 = 0 A3 = 0
*4 RX = 1
*5 A4 = 2 B4 = 0 A3 = 0 LTR = 0 LGL = 0
*6 33600 = 0 31200 = 0 28800 = 0 26400 = 3 24000 = 4
21600 = 0 19200 = 0 16800 = 0 14400 = 0 12000 = 0
9600 = 0 7200 = 0 4800 = 0 2400 = 0
14400 = 11 12000 = 0 TC9600= 0 TC7200= 0
14400 = 0 12000 = 0
9600 = 0 7200 = 0 4800 = 0 2400 = 0
*7 STD = 10 FINE = 8 SUPER = 0 ULTRA = 0
*8 MH = 0 MR = 4 MMR = 7 JBIG = 7 JPEG = 0
*9 G3 = 4 ECM = 14
*10 PRINT = 64 / 64 READ = 35 / 35

*11
#000
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 4 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0

##100
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0

##200
0 0 0 0 0 0

##220
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0

##280
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0

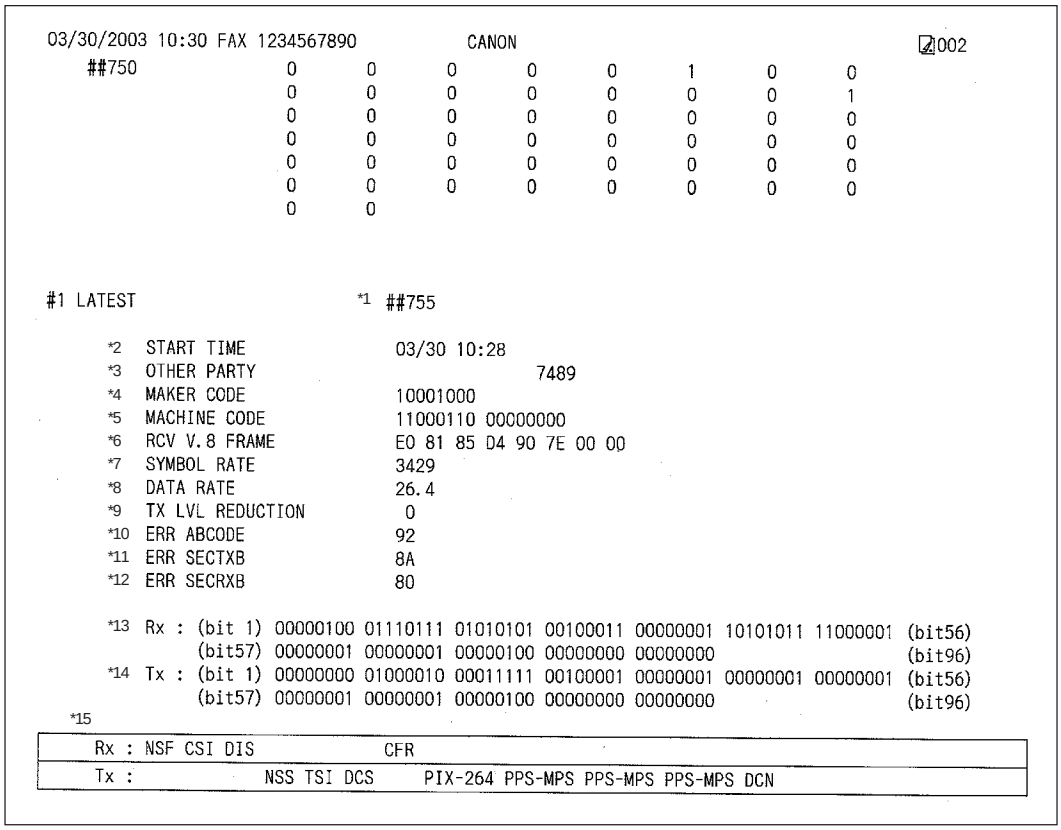
##670
0 0 0 0 0 0

**Figure 4-36 System Dump List 1**

*1 : Date on which data was initialized with service data #8 CLEAR, ALL
*2 : Total number of transmission
*3 : Total number of pages transmitted for each document size
*4 : Total number of reception
*5 : Total number of pages received for each document size
*6 : Total number of pages transmitted and received for each modem speed
*7 : Total number of pages transmitted and received for each mode
*8 : Total number of pages transmitted and received for each coding method
*9 : Total number of pages transmitted and received in each mode
*10 : Total number of pages printed/scanned
[Display example]
PRINT = 30*/100** READ = 30*/100**
* Indicates the value input with Service Data #8 CLEAR, COUNTER.
** Indicates the value counted since shipment from the factory.

*11 : Total number of occurrences for each error code
[Display example]

| | | | | | |
|---|---|---|---|---|---|
| ##280 | 1 | 7 | 3 | 0 | 0 |
| | ##280 errors | ##281 errors | ##282 errors | | |



```
03/30/2003 10:30 FAX 1234567890          CANON                              002
   ##750              0   0   0   0   0   1   0   0
                      0   0   0   0   0   0   0   1
                      0   0   0   0   0   0   0   0
                      0   0   0   0   0   0   0   0
                      0   0   0   0   0   0   0   0
                      0   0   0   0   0   0   0   0
                      0   0


#1 LATEST                    *1  ##755

      *2  START TIME              03/30 10:28
      *3  OTHER PARTY                        7489
      *4  MAKER CODE              10001000
      *5  MACHINE CODE            11000110 00000000
      *6  RCV V.8 FRAME           E0 81 85 D4 90 7E 00 00
      *7  SYMBOL RATE             3429
      *8  DATA RATE               26.4
      *9  TX LVL REDUCTION         0
      *10 ERR ABCODE              92
      *11 ERR SECTXB              8A
      *12 ERR SECRXB              80

      *13 Rx : (bit 1) 00000100 01110111 01010101 00100011 00000001 10101011 11000001 (bit56)
               (bit57) 00000001 00000001 00000100 00000000 00000000                   (bit96)
      *14 Tx : (bit 1) 00000000 01000010 00011111 00100001 00000001 00000001 00000001 (bit56)
               (bit57) 00000001 00000001 00000100 00000000 00000000                   (bit96)
  *15
   Rx : NSF CSI DIS              CFR
   Tx :              NSS TSI DCS     PIX-264 PPS-MPS PPS-MPS PPS-MPS DCN
```

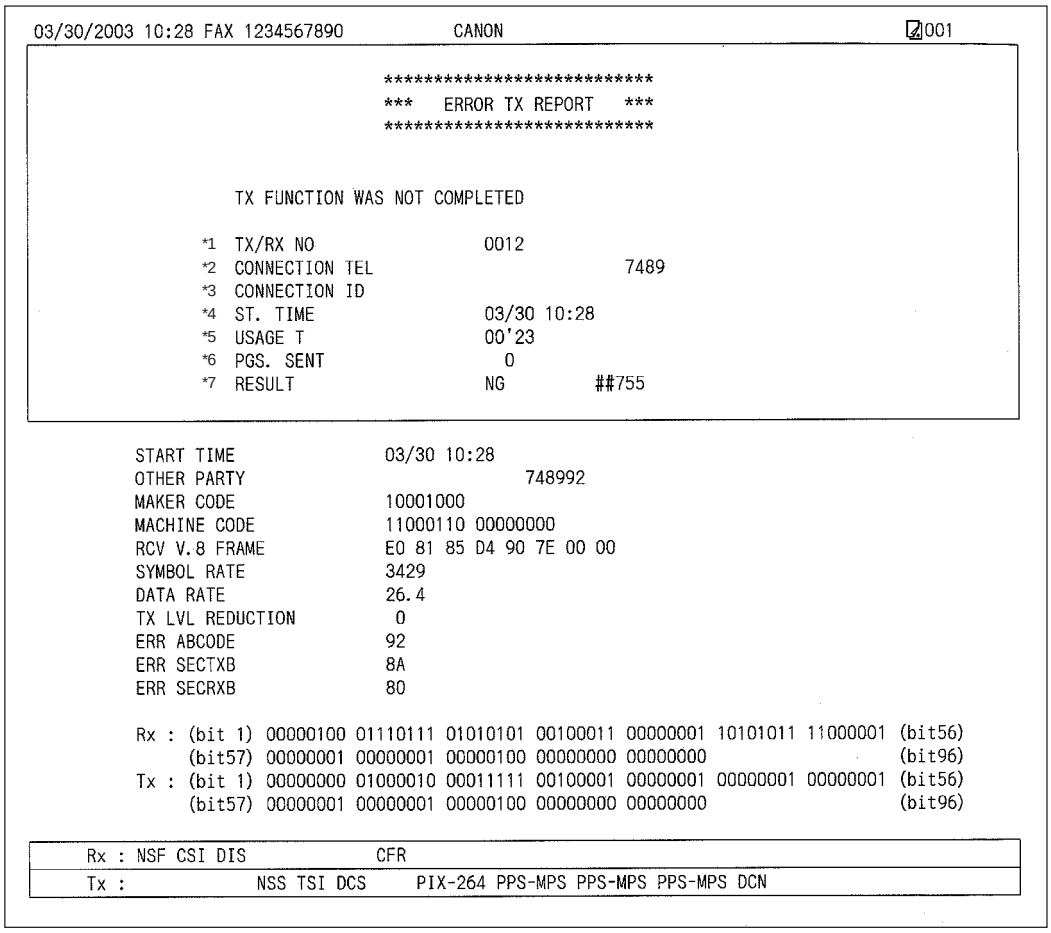
**Figure 4-37 System Dump List 2**

*1 : Service error code
*2 : Communication start date and time (on 24-hour display)
*3 : Telephone number sent from other party
*4 : Maker code
*5 : Machine code
*6 : Received V.8 protocol signal
*7 : Symbol rate used for the primary channel
*8 : Transmission speed used for the primary channel
*9 : 0 (Fixed)
*10 : Code output by the modem when an error occurred
(Not used in the field)
*11 : Transmit status of the modem when an error occurred
(Not used in the field)
*12 : Receive status of the modem when an error occurred
(Not used in the field)
*13 : Bit 1 to bit 96 of received DIS, DCS, or DTC
*14 : Bit 1 to bit 96 of transmitted DIS, DCS, or DTC
*15 : RX=Received protocol signal
TX=Transmitted protocol signal

NOTE

When an error occurs in direct transmission, *6 to *12 will not be listed even if the other party's machine has a V.34 modem.

### a-3) Service activity report (sending/receiving)



```
03/30/2003 10:28 FAX 1234567890          CANON                    001

                          ****************************
                          ***   ERROR TX REPORT    ***
                          ****************************


                   TX FUNCTION WAS NOT COMPLETED

                *1 TX/RX NO                0012
                *2 CONNECTION TEL                        7489
                *3 CONNECTION ID
                *4 ST. TIME                03/30 10:28
                *5 USAGE T                 00'23
                *6 PGS. SENT                 0
                *7 RESULT                  NG         ##755

          START TIME              03/30 10:28
          OTHER PARTY                        748992
          MAKER CODE              10001000
          MACHINE CODE            11000110 00000000
          RCV V.8 FRAME           E0 81 85 D4 90 7E 00 00
          SYMBOL RATE             3429
          DATA RATE               26.4
          TX LVL REDUCTION         0
          ERR ABCODE              92
          ERR SECTXB              8A
          ERR SECRXB              80

          Rx : (bit 1) 00000100 01110111 01010101 00100011 00000001 10101011 11000001 (bit56)
               (bit57) 00000001 00000001 00000100 00000000 00000000                   (bit96)
          Tx : (bit 1) 00000000 01000010 00011111 00100001 00000001 00000001 00000001 (bit56)
               (bit57) 00000001 00000001 00000100 00000000 00000000                   (bit96)

          Rx : NSF CSI DIS              CFR
          Tx :              NSS TSI DCS     PIX-264 PPS-MPS PPS-MPS PPS-MPS DCN
```

**Figure 4-38 Service Error Tx Report**

*1 : Indicates four digits of the transaction number
*2 : Number sent from the other party or number dialled (lower 20 digits)
*3 : ID sent from the other party, if the other party is a Canon fax
*4 : Communication start date and time (on 24-hour display)
*5 : Communication time (in minutes and seconds)
*6 : Number of pages for which transmission was complete
*7 : “NG” display with number of pages for which transmission was fault, and service error code

# 8. WIRING DIAGRAM

## 8.1 Wiring Diagram

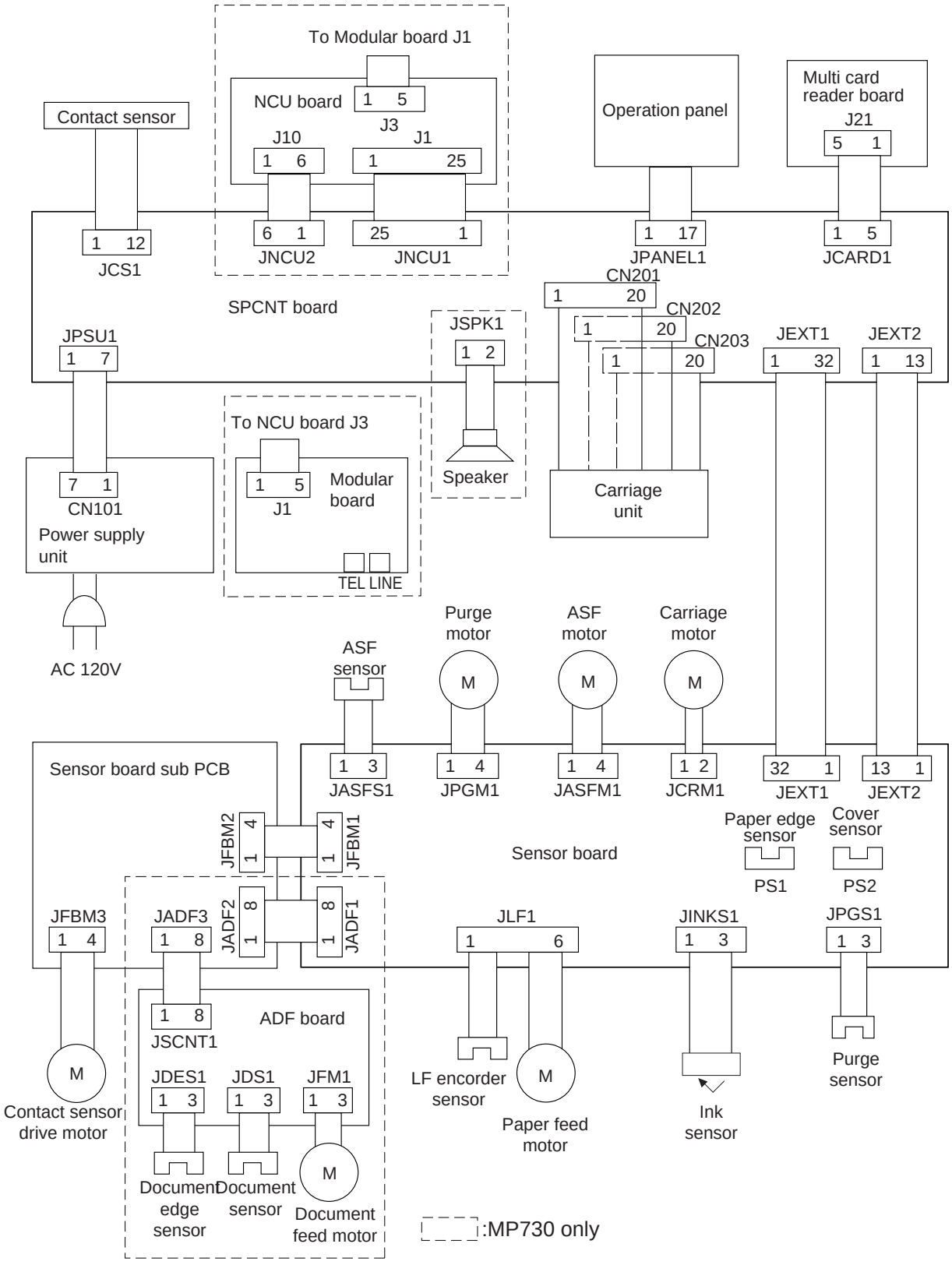



**Figure 4-39 Wiring Diagram**

# Chapter 5

# Appendix

# 1. INSTALLATION

## 1.1 Setting Up

- Install the software
  Install the software in the computer.
- Select a site of installation
- Unpack the machine, and check the attachments
  Make sure none is missing and there is no damage.
- Remove the packing material
  Remove all tape and protective material used on the machine. Do not forget to remove the protective material used in the ADF assembly and LCD display.
- Fit the attachments
- Connect the cable (for MP730)
  Connect the telephone line and any necessary external device.
- Turn on the power
  Connect the power cord. If the machine is not turn on, press [ON/OFF] to turn on the machine.
- Load paper
  Place a stack of paper in the multi-purpose tray.
- Install the printhead
  Remove the protective cap, then install the printhead into the holder.
- Install the ink tanks
  Pull the tape and remove the protective cap, then install the ink tanks. After install, align the printhead.
- Connect the USB cable
  Connect the USB cable to complete the computer settings.
- Setting for facsimile (for MP730)
  Register the date and time, unit telephone number, and unit name.

## 1.2 Checking Operation

- Check the level of quality for both reading and printing.
  Make a copy, and see that it is free of a fault for both reading and printing.
- Conduct a communications test. (MP730)
  Send and receive a fax by connecting to another fax machine, making sure that the image is normally sent and the received image is normally printed.

**What to do when trouble occurs**

Very rarely, during use, the display may go out, all the buttons may stop working, or some other trouble may occur because of strong electrical noise or a large amount of static. If such trouble occurs, execute 'All clear'. For how, please refer to Chapter 3, 1.4 All Clear (Action in the Event of Abnormality).

# 2. USER DATA FLOW

## 2.1 Menu Flow in Each Mode

The following are menu lists available when you press the menu key in each mode. (Copy Mode/ Fax Mode(MP730 only)/Scan Mode/Photo Print Mode)

Menu(Copy Mode)
- 1.SPECIAL COPY
- 2.MAINTENANCE
- 3.USER DATA

Menu(Fax Mode)
- 1.RECEIVE MODE
- 2.MEMORY REFERENCE
- 3.REPORTS/LISTS
- 4.MAINTENANCE
- 5.USER DATA

Menu(Scan Mode)
- 1.MAINTENANCE
- 2.USER DATA

Menu(Photo Print Mode)
- 1.PHOTO PRINT MODE
- 2.VIVID PHOTO PRINT
- 3.PRINT PHOTO DATE
- 4.MAINTENANCE
- 5.USER DATA

**Figure 5-1 Menu Flow in Each Mode**

## 2.2 Name Flow in Each Mode

The following are name lists available in each menu.

### 2.2.1 Special copy name flow

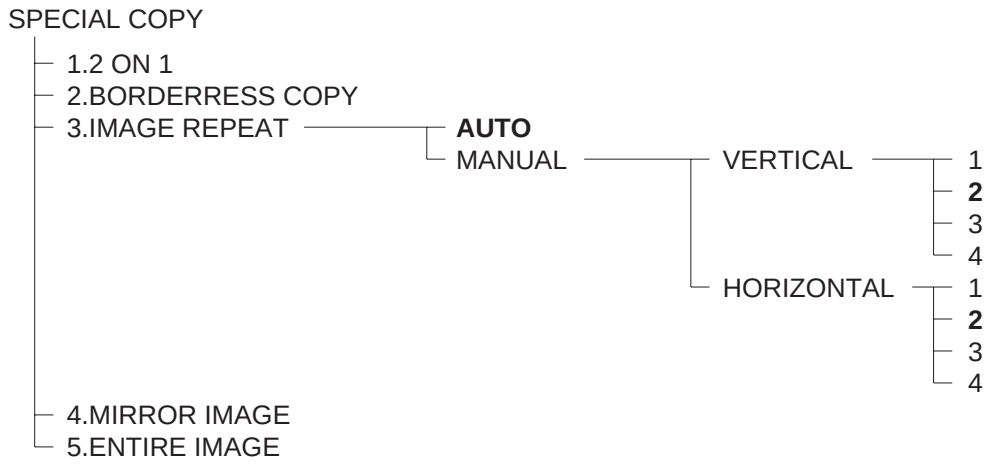



**Figure 5-2 Special Copy Name Flow**

### 2.2.2 Maintenance name flow

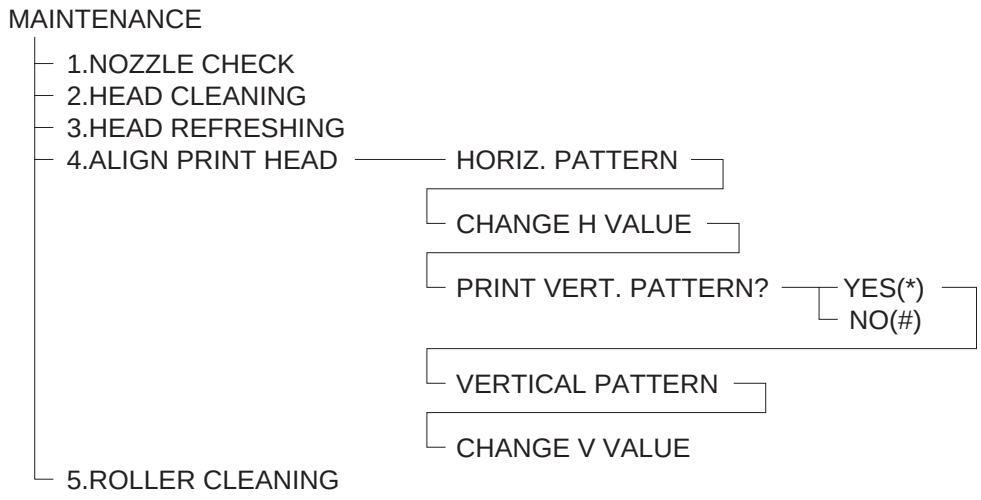



**Figure 5-3 Maintenance Name Flow**

## 2.2.3 User data name flow

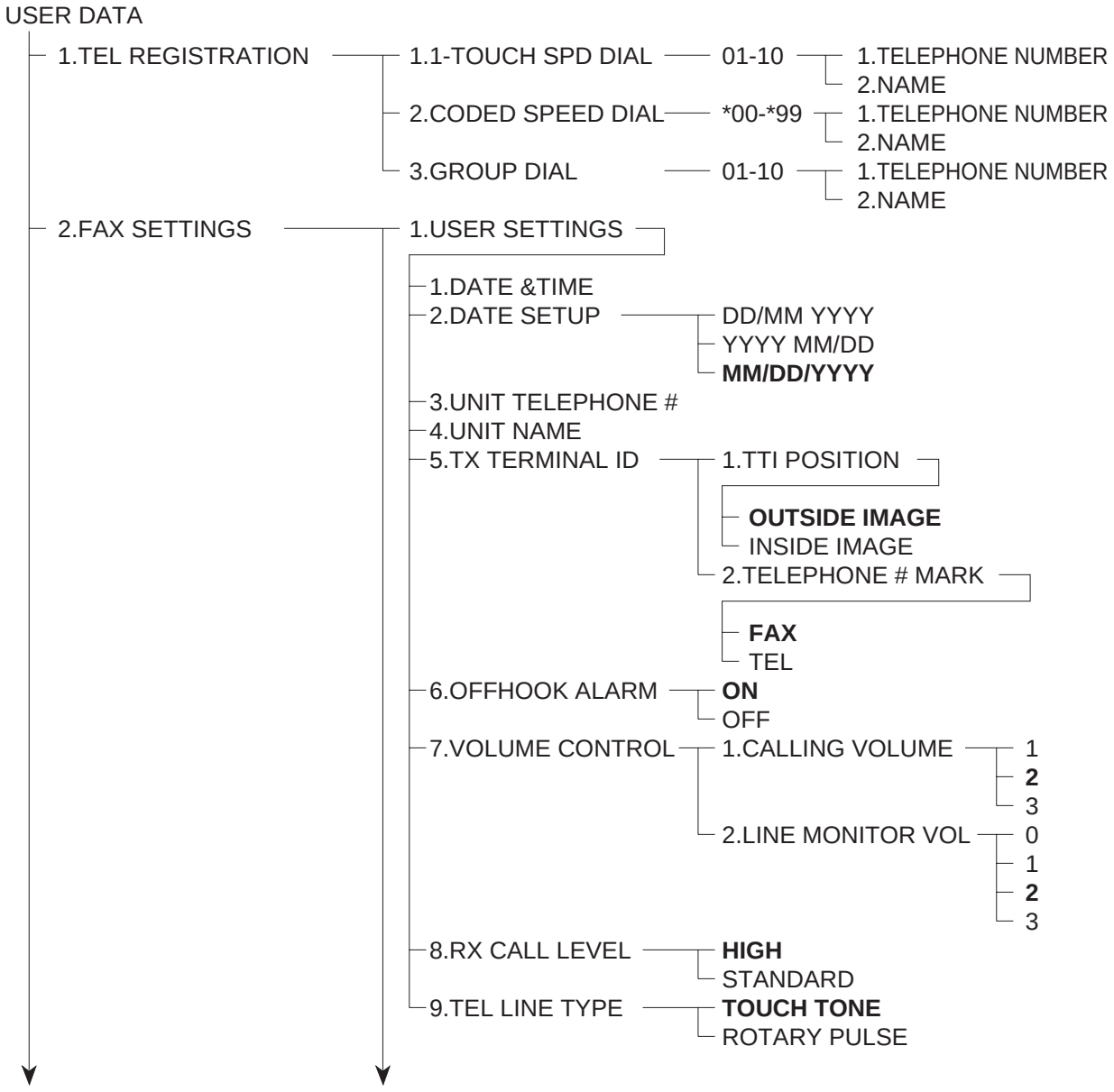



**Figure 5-4 User Data Name Flow 1**

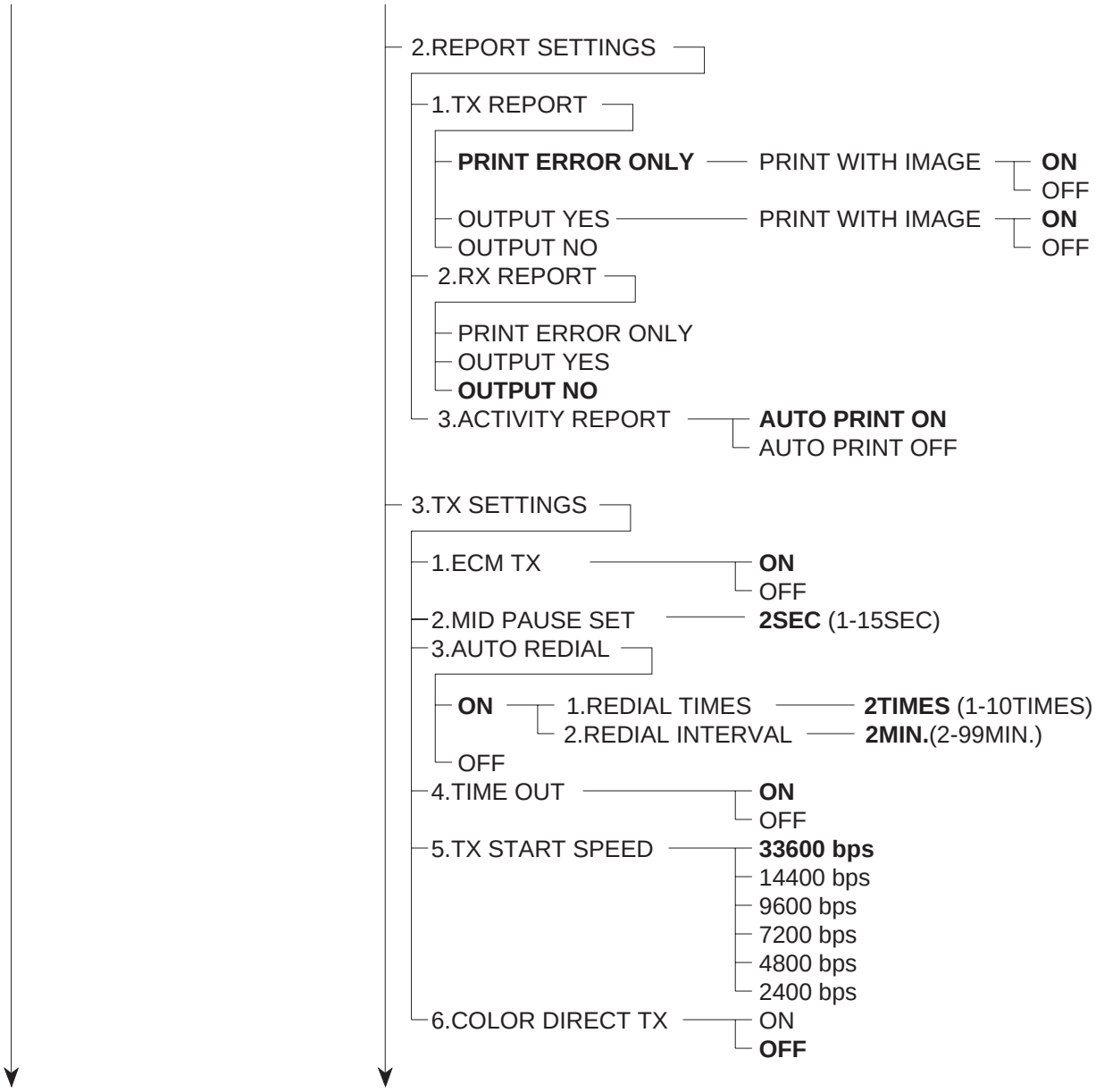



**Figure 5-5 User Data Name Flow 2**

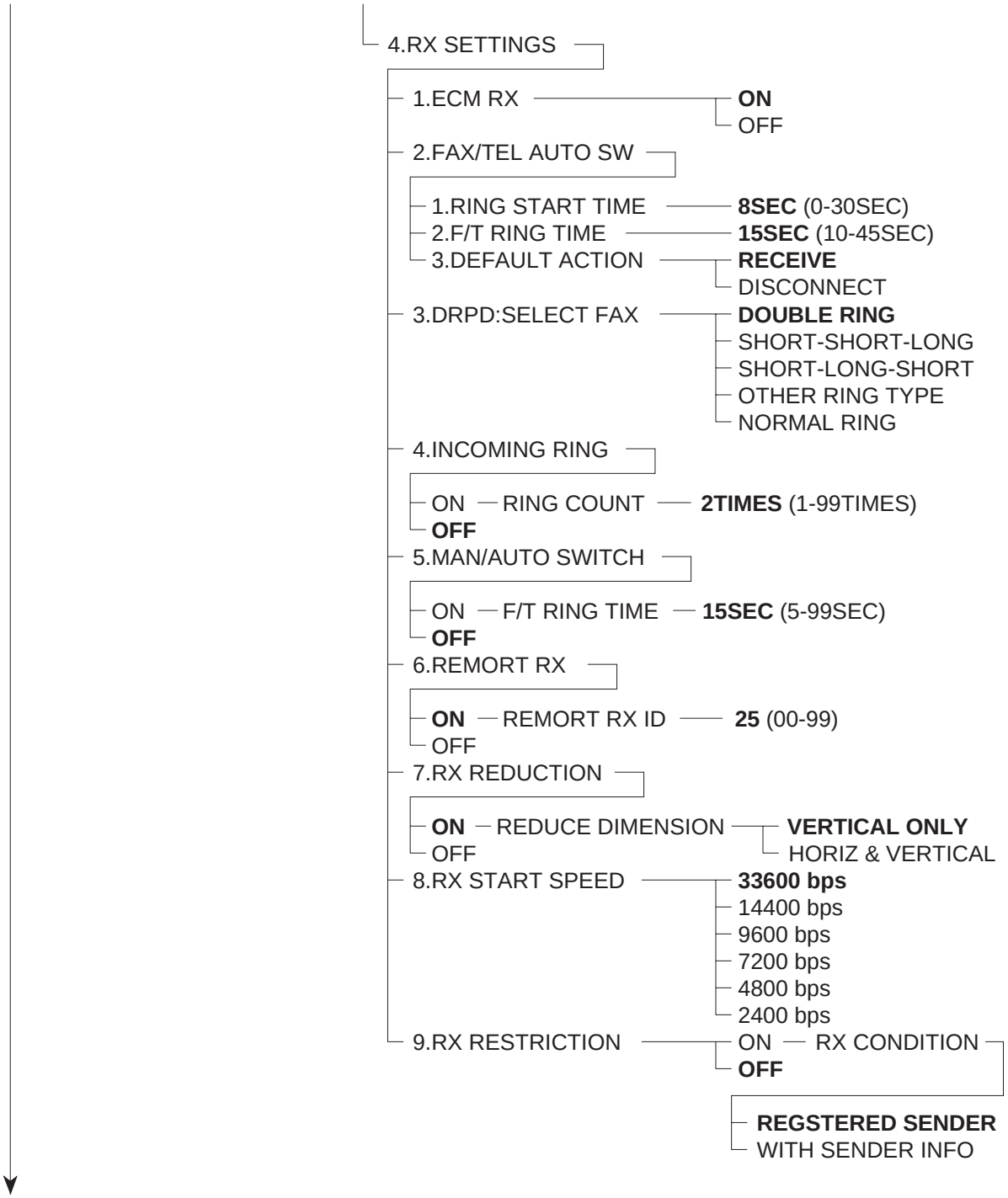



**Figure 5-6 User Data Name Flow 3**

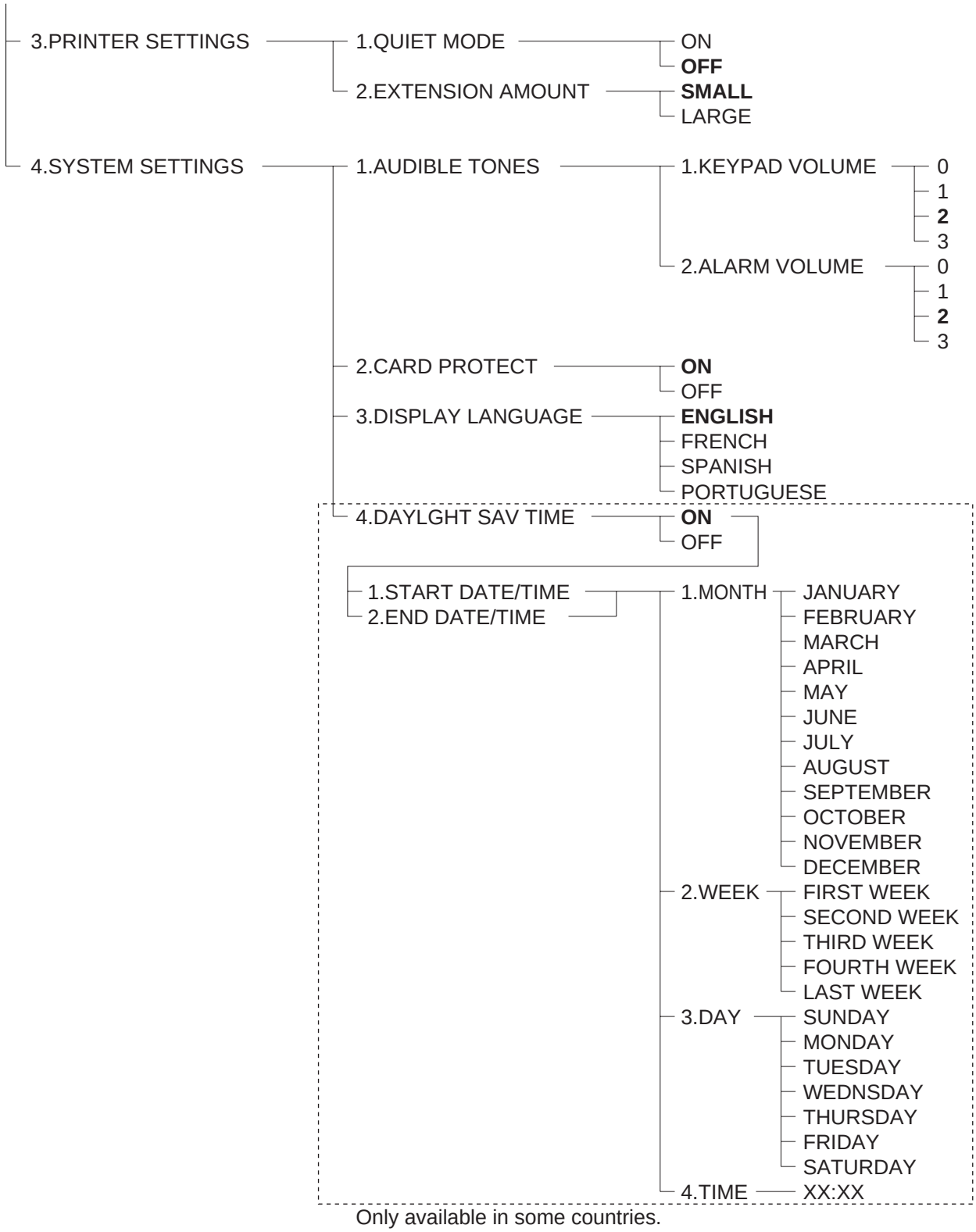



**Figure 5-7 User Data Name Flow 4**

## 2.2.4 Receive mode name flow

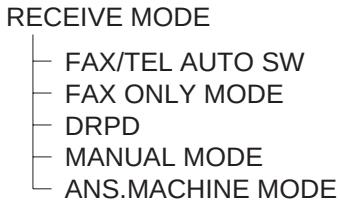



**Figure 5-8 Receive Mode Name Flow**

## 2.2.5 Memory reference name flow

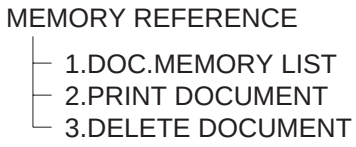



**Figure 5-9 Memory Reference Name Flow**

## 2.2.6 Reports/Lists name flow

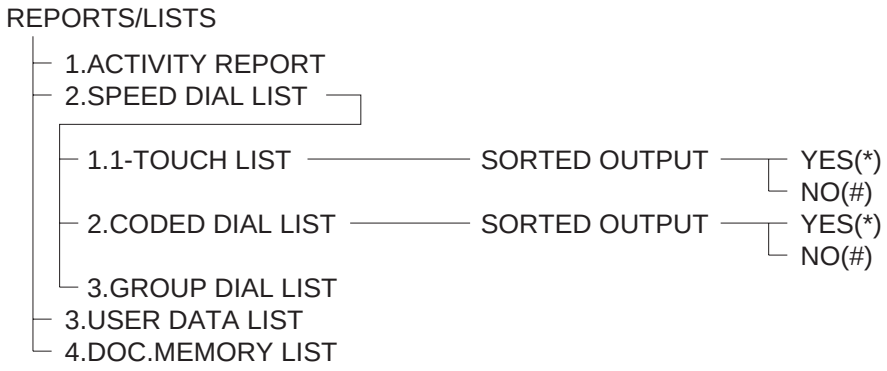



**Figure 5-10 Reports/Lists Name Flow**

## 2.2.7 Photo print mode name flow

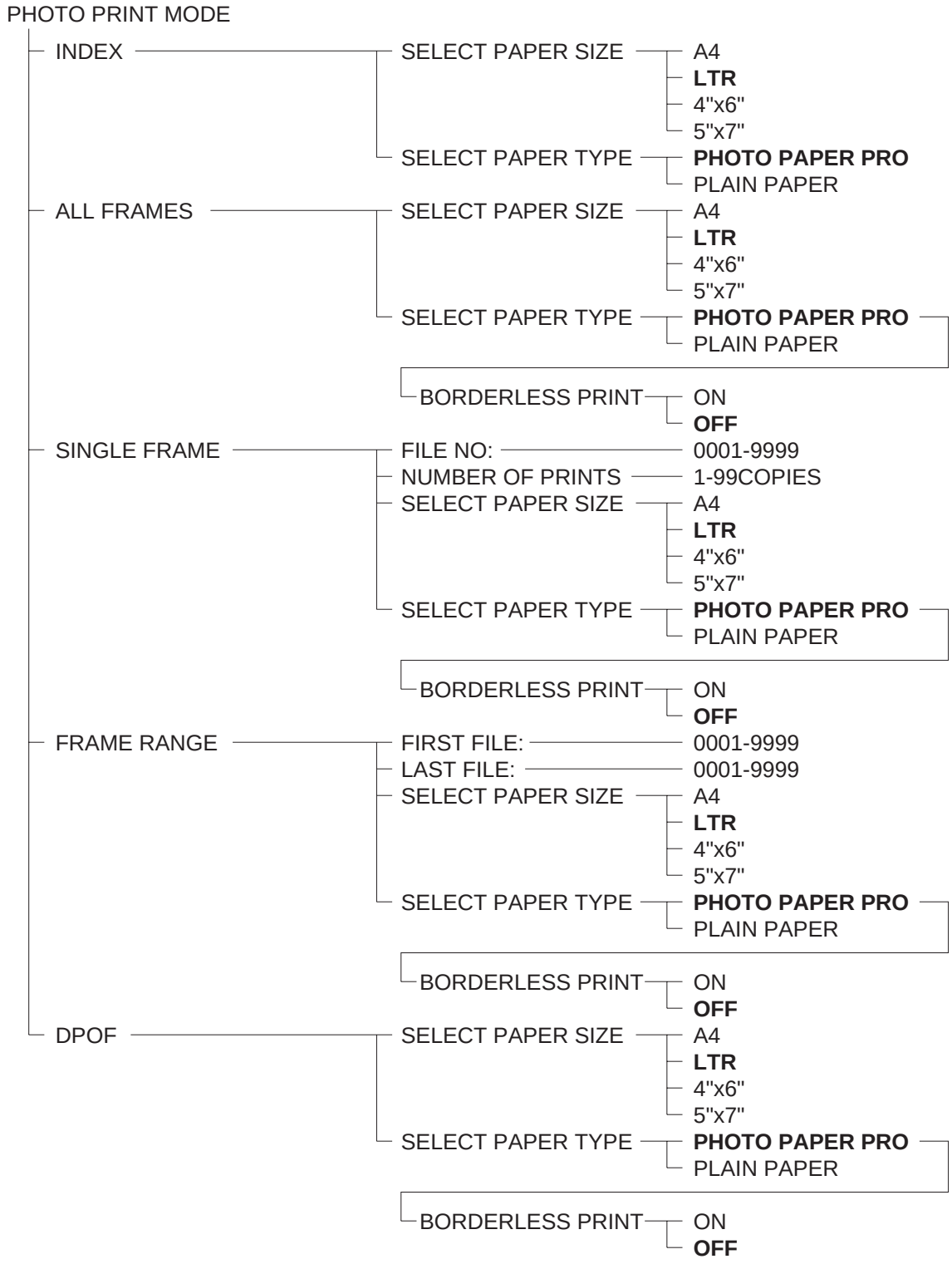



**Figure 5-11 Photo Print Mode Name Flow**

### 2.2.8 VIVID photo print mode name flow

**Figure 5-12 VIVID Photo Print Mode Name Flow**

### 2.2.9 Print photo date mode name flow

**Figure 5-13 Print Photo Date Mode Name Flow**

SERVICE MANUAL *MultiPASS MP730*
*MultiPASS MP700*

SERVICE MANUAL *MultiPASS MP730*
*MultiPASS MP700*
SERVICE MANUAL *MultiPASS MP730*
*MultiPASS MP700*
SERVICE MANUAL *MultiPASS MP730*
*MultiPASS MP700*
SERVICE MANUAL *MultiPASS MP730*
*MultiPASS MP700*
SERVICE MANUAL *MultiPASS MP730*
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*MultiPASS MP700*
SERVICE MANUAL *MultiPASS MP730*
*MultiPASS MP700*
SERVICE MANUAL *MultiPASS MP730*
*MultiPASS MP700*